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The Economic Impact of Georgia's Second Gold Rush: The 1996 Summer Olympics

Jeffrey M. Humphreys and Michael K. Plummer

Atlanta's winning bid for the 1996 Summer Olympic Games will bring tremendous economic benefits to the state of Georgia. These benefits will be realized not solely in 1996 when the Summer Games are held, but also during the years before and after the events. The economic impacts will be the result of new dollars brought into the state by both the Atlanta Organizing Committee (AOC) and out-of-state visitors. The initial injections of new dollars will occur primarily in and around Atlanta and Savannah, but re-spending of these dollars will have effects that will be felt in even the smallest hamlet in Georgia.

In the fall of 1989, the AOC's Games Financing Committee asked KPMG Peat Marwick and the University of Georgia to assist with the bid for the 1996 Olympics by assessing the economic impact of hosting the Summer Olympic Games in Atlanta. The objectives of the preliminary study completed in early February, were threefold:

(1) To identify and quantify the economic benefits from the Olympics and related events accruing to the state during 1989-1997.

(2) To provide the AOC with a fiscal policy tool to monitor and manage the timing of revenues and expenditures.

(3) To lay the foundations for a more detailed study of the 1996 Olympics once Atlanta had been selected as the host city.

The analysis is considered preliminary specifically because the estimates of actual expenditures are subject to change; the type and number of pre-Olympic events are preliminary and subject to change; the economic multipliers used in the analysis are based on a report prepared by the U.S. Department of Commerce in 1986, and these will change as the state's economy grows. Future updates will be far more comprehensive than this initial analysis.

THE METHODOLOGY

The study's format is multi-dimensional, accounting for the time period 1989 to 1997, the various forms of activities and events occurring during this time frame, and the types of expenditures creating the impacts to the state economy. The primary expenditures are those by the AOC covering capital, salaries, and other; and those expected from visitors for transportation, lodging, and souvenirs and merchandise.

Two types of economic impact are assessed. The value added or direct impact represents the initial round of dollars spent in Georgia from sources outside the state. Only expenditures from out-of-state sources represent new injections of spending to the Georgia economy. The induced economic impact represents the multiplier effect of the initial injection of dollars. This concept recognizes that the new dollars are spent in successive rounds within a community, a chain reaction that augments the economic impact of the direct effect. The magnitude of the multiplier depends on the structure of the local economy. For example, a greater degree of economic independence within the community, or conversely, a lesser de-

pendence upon products imported from outside the community, will yield a larger multiplier effect. The sum of the direct and induced impact is the total economic impact.

The multipliers used to estimate the total economic impact of out-of-state expenditures are based upon the U.S. Department of Commerce's RIMS II regional input-output model. RIMS II is a widely accepted economic planning tool and is used extensively in economic forecasting. RIMS II multipliers are well suited for assessing the impact of both visitor and AOC expenditures and have public creditability because of their conservative values.

Estimation of direct visitor and AOC expenditures requires many assumptions which are detailed in the full report. In general, the assumptions are based on Los Angeles' experience with hosting the 1984 Summer Olympics, Atlanta area visitors' spending patterns, AOC projections, and local facility requirements.

THE ECONOMIC IMPACT

Economic impacts are assessed in terms of output, earnings, and employment. Table 1 identifies the valued added, induced, and total output impacts of the 1996 Olympics and related events on the state's economy. Output can be thought of as gross receipts or sales. The value added or direct output impact of combined AOC and visitor spending is slightly over $1.6 billion. The induced or re-spending impact of these newly injected dollars equals $1.9 billion, yielding a total output impact of about $3.5 billion. AOC spending accounts for 59 percent, or approximately $2 billion, of the total output impact, with visitor spending accounting for the remainder.

While approximately 50 percent of the $6.5 to $7 million AOC bidding expenditures remain within the state, these expenditures do not create a economic impact because the dollars originated from within Georgia. A true economic impact to the region results only from outside dollars flowing into Georgia and the value added column reports only these dollars.

Table 2 reports the total earnings and employment impacts. The Olympics and related events will create $1.1 billion in earnings for the Georgia economy, and represent additional employment of 83,756 full-time and part-time jobs.

In addition, the Olympics will generate a substantial amount of revenue for all levels of government in the form of sales tax, lodging tax, state income tax, business license fees, rental of convention center and sports facilities, and increased ridership of MARTA. For example, assuming a 6 percent sales tax, revenues from ticket sales alone amount to $19.6 million. Visitors' expenditures for food, entertainment, and merchandise will generate another $23.5 million in sales tax revenues. Given a 7 percent lodging accommodation tax, the Olympics and related events will generate $10.1 million in hotel room tax revenues. Hosting the Olympics also will boost state income tax revenues.

Other substantial post-Olympic benefits are expected. Tangible benefits include several new permanent structures, as well as renovations to existing facilities. The Olympic Village and athletic housing will remain intact as part of the Georgia Tech campus. The Olympic Stadium, which will be completely paid for, can be used as a permanent home for various professional sports in Atlanta. These permanent additions to the state's infrastructure will reduce taxpayer outlays in the future. The AOC currently projects a post-Olympic surplus of approximately $150 million which will benefit the Olympic family, help amateur athletics in the South, and defray the costs of medical care and training of Olympic athletes.

Intangible benefits also will flow from hosting the Olympics. Among these are name recognition for the state as well as the Atlanta and Savannah areas; enhanced foreign investment; enhanced convention and tourist activity; the psychological boosts to citizens' and business pride in and expectations for Georgia; and the opportunity to demonstrate the values of cooperation, respect, and sportsmanship at the heart of the Olympic movement. AOC officials particularly stress the impact that Olympic preparation and competition will have on the young people of the state and region.

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Table 1

OUTPUT IMPACT OF 1996 OLYMPICS ON GEORGIA ECONOMY
(Thousands of 1989 Dollars)

Expenditure Category	Value Added Expenditure	Induced Impact	Total Impact
AOC Bidding	0	0	0
Pre-Olympic			
Out-of-State Visitors	69,903	83,135	153,038
AOC Spending	0	0	0
Related Sporting Events			
Out-of-State Visitors	21,362	25,405	46,767
AOC Spending	33,327	38,517	71,844
Cultural Events			
Out-of-State Visitors	65,808	78,265	144,073
AOC Spending	22,331	23,039	45,370
Olympic Games			
Out-of-State Visitors	501,194	598,063	1,099,257
AOC Spending	846,540	1,074,237	1,920,777
TOTAL AOC BIDDING	0	0	0
TOTAL AOC SPENDING	902,198	1,135,793	2,037,991
TOTAL VISITORS	658,267	784,868	1,443,135
GRAND TOTAL	1,560,465	1,920,661	3,481,126

FUTURE UPDATES

Again, this study is a first approximation of the economic impacts associated with hosting the 1996 Summer Olympics. Future updates will incorporate newly available information and have a broader scope. While it is difficult to predict the full scope of future studies, several possibilities exist. Some may deal with estimates of localized geographic impacts (e.g. Atlanta and Savannah); impact estimates for specific types of business and industry; accounting for both enhanced and displaced convention activity and vacation travel; fully accounting for state and local tax revenues flowing from the Olympics and related events; and more precise timing of expenditures, revenues, and impacts.

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Table 2 follows on next page

Table 2

EARNINGS AND EMPLOYMENT IMPACT OF 1996 OLYMPICS ON GEORGIA ECONOMY

Expenditure Category	Value Added Expenditure ($1989 in 000s)	Total Earnings Impact ($1989 in 000s)	Total Employment Impact (Jobs)
AOC Bidding	0	0	0
Pre-Olympic			
Out-of-State Visitors	69,903	47,459	4,138
AOC Spending	0	0	0
Related Sporting Events			
Out-of-State Visitors	21,362	14,503	1,265
AOC Spending	33,327	24,357	1,724
Cultural Events			
Out-of-State Visitors	65,808	44,679	3,895
AOC Spending	22,331	15,222	1,075
Olympic Games			
Out-of-State Visitors	501,194	343,519	29,563
AOC Spending	846,540	634,583	42,096
TOTAL AOC BIDDING	0	0	0
TOTAL AOC SPENDING	902,198	674,162	44,895
TOTAL VISITORS	658,267	450,160	38,861
GRAND TOTAL	1,560,465	1,124,322	83,756

Quick Start: Georgia's Competitive Training Edge for Economic Development

Keith Johnson

When it comes to workforce training, Georgia has a not-so-secret economic development weapon called Quick Start. Just the mention of Quick Start to officials of multi-national Japanese, Korean, Taiwanese, German, and Dutch firms brings smiles and nods of recognition just as it does to officials of major domestic corporations throughout the United States.

Quick Start is the Georgia Department of Technical and Adult Education's statewide training arm for new and expanding industries in the state. Developed as an incentive for companies to locate in Georgia, the Quick Start program is entirely state funded. All training services are available without cost to client companies. The program was created by statute in 1967 to provide job-specific training for Georgians to enter the workforce in the state's new and expanding industries. In its 22-year history, Quick Start has trained over 100,000 new workers for over 1,300 Georgia businesses and industries.

The range of training services provided by this program are as diverse as the nature of the businesses and industries it has served. Quick Start has trained Georgians to assemble intricate missile components for the defense industry, process foods from breakfast cereals to frozen entrees, manufacture an array of textile, paper, and plastic products, assemble a variety of commercial and consumer electronic products, and to operate computers for every purpose from the telecommunications industry to financial service institutions. There is no process too simple or complex nor company too small or too large to receive Quick Start training services.

Program officials work closely with the Georgia Department of Industry, Trade and Tourism, the Georgia Department of Labor, and many other statewide and local economic developers, such as chambers of commerce, in the recruitment of new businesses and industries to Georgia. Since economic growth is directly related to the level of employment of a state's workforce, competition among states to attract new businesses and industries is heavy. Many factors influence a company's decision to locate new operations in any state, including the availability of air and surface transportation, tax structure, land availability and cost, environmental factors, labor availability, and training.

The Georgia Quick Start training program often is described as one of Georgia's primary incentives for attracting new businesses and industries. In fact, it is not unusual for companies to cite the Quick Start program as the final factor in their decision to locate new businesses or industries here. Following a study of U.S. approaches to industrial development, Richard Howard, Manager of Industrial Policy for the Province of Ontario, Canada noted, "From our meetings in other states, we can report that Quick Start has a number of imitators, but none so well organized and effective."

HOW QUICK START WORKS

While some states attempt to recruit new businesses and industries with the offer of direct cash grants to prospective companies, the Georgia Quick Start program is service-based. It provides direct training services for a new or expanding company's Georgia workforce. The overall goal of the program, in concert with other statewide and local economic developers, is to provide new jobs for Georgians by delivering a comprehensive range of training services to new or expanding companies.

When a company announces its intent to locate a new operation in Georgia, the Quick Start program immediately responds with a highly organized and systematic process to identify company needs and deliver training which is customized to the company's specific requirements. Working closely with company officials, training specialists begin by identifying the job classifications, proceed through the development of training materials, and conclude with the delivery of training. At the end, the company's workforce is trained and ready when the company begins its Georgia operation, and all without cost to that company.

Traditionally, Quick Start's focus has been on skill training for manufacturing-based production jobs such as machine operators, welders, and electronic component assembly. Because of the increasing importance of automation in recent years, however, the program now offers training in more sophisticated technologies such as that required for programmable logic controllers, and in productivity enhancement concepts such as statistical process control, just-in-time inventory, and total quality management. Increasing numbers of companies also are adopting participatory management strategies. Quick Start has responded with a comprehensive 26-module team skills training program.

Although Quick Start training originally was offered only to manufacturing companies, the immense growth in Georgia's service industry has given rise to additional training programs for service-based companies ranging from warehousing and distribution to financial service institutions and telecommunications. The program, however, does not provide training for retail operations where skills are readily available in the

workforce, or public service facilities such as hospitals which require long-term training leading to an occupational credential.

In cooperation with the Georgia Department of Labor, Quick Start also provides pre-employment training for companies, an option designed to assist with employee screening. Once the Department of Labor has screened potential employees to the company's specifications and the company has reviewed applications, Quick Start provides pre-employment training for those the company refers. Typically lasting three weeks or less, this program focuses on work habits, orientation to the company's product, process, or service, and skills which are fundamental to other more specific job skills. During this phase, neither the company nor the trainees are obligated to either offer or accept employment. If the trainee successfully completes the pre-employment process, however, employment usually is offered.

PROGRAM STRUCTURE

The program's structure for the delivery of training services is described as a three-way partnership between the state-level Quick State support structure, the client company, and the state's system of 32 technical institutes. Each training project is administered by a technical institute which serves the region of the state in which the company locates.

To provide statewide consistency and quality of Quick Start training services, in 1986 the Georgia Board of Technical and Adult Education conceived and initiated a nationally unique certification program for Quick Start and technical institute economic development personnel called Economic Developer Trainer Certification. The program requires an average of two years to complete and addresses virtually every facet of the planning and management of company training needs.

At its May 1990 meeting, the State Board of Technical and Adult Education certified 38 persons who successfully completed the two-year program. Once a company locates in the state or expands its Georgia operation, a certified trainer will manage that company's training project from its critical planning stages through implementation.

Now, no matter where a company locates in Georgia, it will receive the same high quality of training service. As the only one of its kind in the country, the trainer certification program represents a new dimension to Georgia's pro-active stance on economic development.

Client companies are not abandoned even after they begin operation and Quick Start's training commitment is fulfilled. A company's continuing specialized short-term training needs are met via the technical institutes' existing industry training services program, as well as by the schools' comprehensive range of full-time degree and diploma programs.

QUICK START AND GEORGIA'S LABOR FORCE

Not only is the nature of work changing due to company trends toward greater automation and alternative management styles, but the nature of the workforce itself is changing. In fact, the U.S. Labor Department, the National Alliance of Business and others long have predicted that the demographics of the workforce will have changed dramatically by the year 2000. Nationally, fewer and fewer new workers possess the fundamental academic skills to be productive in the workplace.

Georgia also is experiencing its share of problems in learning readiness among workers, a problem which is compounded by a school dropout rate of 35-40 percent. As training becomes increasingly more complex due to industry requirements, the gap between worker qualifications and job requirements continues to widen.

Efforts aimed at providing basic literacy education for adults have proven that undereducated adults are not only difficult to identify and recruit, but difficult to retain in a traditional class setting. The Quick Start program has taken positive steps to moderate this problem. Since motivation to learn is directly related to its effectiveness, Quick Start has developed a program to provide academic skills which are directly related to jobs skills. At request of any client company, program specialists will assess each job classification to determine the level of reading and/or mathematical skills a worker needs in order to perform in a particular job. Then the academic skills of new employees are assessed to determine their readiness for particular jobs. If discrepancies are noted, training materials are modified to include the appropriate academic skills required.

WHAT QUICK START COSTS

According to program officials, Quick Start is a real bargain for Georgia taxpayers. For example, during FY 1989, the program provided training for 11,418 Georgians, representing 123 new or expanding Georgia companies, at an average cost per trainee of only $432. This translates to approximately $4.9 million. These funds not only helped create new jobs but also provided training which enables thousands of Georgians to earn livings and contribute to the state's tax base.

From all state and local revenue sources, the State of Georgia expended nearly $1 billion on the state's criminal justice system to cover the cost of judicial and legal expenditures, police protection and corrections. This equates to each Georgian paying about $152 per year to support law enforcement. In contrast, the Quick Start program cost each Georgian about 7 cents in 1989.

Does the training pay off? The accompanying article, about a Canadian company's experience with Quick Start training, details the program's effectiveness.

Keith Johnson is the marketing manager for Quick Start in Atlanta.

The Parallam Division at Colbert: An Example of Quick Start

Suzanne A. Lindsay

When an international forest products corporation based in Vancouver, British Columbia, wanted to build its first full-scale manufacturing plant for a new composite lumber called Parallam PSL, it found a home in Colbert, Georgia — thanks in part to the state's Quick Start program, company officials say. The plant is now in production and Quick Start's involvement is nearly over, but in the two years since MacMillan Bloedel Limited announced that it would build a $60 million, 243,000-square-foot plant on a 54-acre site, Quick Start staff have worked extensively with the company to prepare for the startup.

THE COMPANY

MacMillan Bloedel Limited produces a wide range of building materials, wood pulp and paper products, and containerboard products in British Columbia, with additional plants in Saskatchewan, Ontario, and the United States. The company manages over 2.4 million acres of productive forest land in British Columbia, plus another 800,000 acres in Saskatchewan. MacMillan Bloedel also owns interests in packaging companies in Canada and the United Kingdom, and in firms manufacturing fine papers in The Netherlands and Belgium. The company's products are shipped around the world to markets in the U.S., Europe, China, Japan, other Asian countries, Australia, and Latin America. In 1989 sales totaled $3,273.7 million, with net earnings of $246.7 million; invested capital stood at $2,869.1 million.

MacMillan Bloedel Limited also has extensive interests in the United States. Its timber resources are concentrated in Alabama and Mississippi, where the company controls about 450,000 productive acres and owns 195,000 outright. Principal U.S. facilities include an integrated lumber, plywood, linerboard and corrugating medium production complex in Pine Hill, Alabama; corrugated container plants at ten locations around the country; and the new Parallam Division plant at Colbert. A plant producing another new strand lumber, PSL 300, also is scheduled for construction in Deerwood, Minnesota. The U.S. headquarters for MacMillan Bloedel Building Materials, one of the country's largest lumber distributors, are in Alpharetta, Georgia; this office also handles containerboard sales in the U.S. and abroad. Altogether, as of 1989 MacMillan Bloedel operated 25 U.S. distribution centers for its products.

THE PLACE: COLBERT, GA.

At first glance, the spanking-new Parallam Division plant seems an unlikely addition to the green fields a scant mile east of Colbert. The very small city (with an estimated July 1, 1988 population of 560) has been known chiefly for its plantings of red canna lillies, a rousing annual Fourth of July celebration, and a central downtown listed on the National Registry of Historic Places. It is located near the southern edge of Madison County, a largely agricultural area with a 1988 population of 20,938 (up 18 percent since 1980) that has been recruiting industry actively in recent years.

What Colbert has, however, is the right mix of location and resources to eclipse five other final contenders in MacMillan Bloedel's search for a plant site. The factors involved are almost a textbook list of points businesses look for in a site: access to markets, availability of both natural resources and potential employees oriented toward productivity, a pleasant physical environment, and location close to a technical institute, a major university, and a lively metropolitan area.

Despite its size, Colbert met all the requirements. The city is well located to serve distribution centers in the eastern United States and Canada by rail, with additional road access and nearby air service. The area has a plentiful and attractively priced supply of Southern pine timber, the basic natural resource required for Parallam; the site also provided adequate water for processing purposes, when two wells drilled during construction tapped a healthy underground flow. A pool of potential employees (trainable and well grounded in a work ethic) living within easy commuting range already existed. Northeast Georgia's climate and the general living environment of a site twelve miles from the University of Georgia and

Athens and within easy reach of Atlanta were important. Both state and local officials were welcoming; regional planners, in fact, credit the Georgia Department of Industry, Trade, and Tourism and especially the Madison County Board of Commissioners with playing a large part in the final selection of Colbert. (Corporations such as MacMillan Bloedel, they note, generally can choose from many sites, and will go only where they feel wanted.) Finally, the availability of Quick Start services through Georgia's Department of Adult and Technical Education and the Athens Area Technical Institute was vital.

THE PRODUCT: NEW AND CHALLENGING

Quick Start services were particularly important because both the product and process involved in its manufacture are new. It took MacMillan Bloedel nineteen years to develop its trademarked "Parallam PSL" (Parallel Strand Lumber). Using Douglas fir as raw material, a pilot plant in Vancouver, B.C. began limited production in 1982 and commercial production in June 1988. In that same month, the inventors of the process were awarded the Marcus Wallenberg Prize, the equivalent of a Nobel Prize in forestry research, in a ceremony held in Sweden. The Colbert plant is the first full-scale commercial production facility for Parallam PSL.

Corporations such as MacMillan Bloedel generally can choose from many sites, and will go only where they feel wanted.

The manufacturing process is technologically innovative. Southern pine logs are delivered to an on-site woodyard and then debarked, trimmed, presoaked, and while still hot and moist, cut into thin veneer. The veneer is dried and sliced lengthwise (with the grain of the wood) into narrow strips — the "strands" of the final product. The strips are then trimmed to remove defective areas, coated with waterproof adhesives, and bonded together under pressure in a microwave curing operation. Parallel strand lumber measuring roughly 14 inches high by 18 inches wide emerges from the curing process in a continuous billet that, for handling convenience, is cut to 66-foot lengths. The billets are sawed to size and finished in a high-technology sawmill located next to the manufacturing plant. Stockpiled in an on-site warehouse, the result is an attractive, stable, low-moisture composite product designed for structural use as beams and headers, with over twice the design strength of natural lumber.

HOW QUICK START HELPED

MacMillan Bloedel's interest in Quick Start began early. Representatives of the Georgia Department of Industry and Trade and of the program itself outlined the services available early in the company's exploration of Georgia as a potential plant site. A major advantage to the company, according to Donald Gabriel, plant manager for the Colbert facility, was that "Georgia's Quick Start program not only has programs to help a new industry train prospective employees, but also a structured program to follow through to insure that all areas are completed as specified." When Colbert was picked as the plant site, Quick Start officials at the state level, the staff of the Athens Area Technical Institute (AATI), which would provide the actual services, and MacMillan Bloedel began assessing the company's training needs for its projected 150 employees. Bob Yongue, Director of Quick Start and Community Services at AATI, coordinated the project locally, working closely with the plant management, especially its Employee Relations Department.

Quick Start planners initially expected to provide a training curriculum involving technical materials in seven general job classifications, develop a process/product overview videotape, conduct Train-the-Trainer workshops to familiarize the company's own trainers with the technical materials and curriculum, and coordinate both pre-hire employment services provided by the Georgia Department of Labor, and a range of post-hire services. Early in 1989, two Quick Start technical writers spent several weeks at MacMillan Bloedel's prototype plant in Vancouver, observing and videotaping the production process. When they returned to the two temporary buildings set up and equipped by AATI as working offices at the construction site, it quickly became apparent that developing the technical manuals would be a much larger and more time-consuming project than had been anticipated. The initial team was expanded to five writers and a supervisor-writer, with additional clerical, drafting, and photographic support staff as needed. The project was a relatively large one for AATI, according to Yongue, although on a state basis it would be considered only medium-sized.

Working with vendor manuals, equipment, and engineers on site, plus the Employee Relations Department and experienced production employees from Canada, the writers eventually prepared the videotape overview and technical training manuals for seventeen specific job categories, plus the seminars needed to present them and the curriculum plan to the company's own training staff. In some instances, materials were revised as changes were made in the machinery actually installed in the plant. Each technical manual covered a wide range of information, including training objectives, an introduction to equipment and and explanation of the theory involved, and discussions of controls, safety considerations, operations, and maintenance. Both AATI and MacMillan Bloedel staff agree that the preparation of the complex technical materials and an integrated training curriculum, working to demanding schedules, was the most challenging and vital part of the Quick Start project at the Parallam Division plant.

As the materials were completed, beginning in the fall of

1989, they were put into use. The process devised by MacMillan Bloedel to select and train employees reflects the importance of capable, productive workers to the plant's operation and eventual success. The company opted to use pre-hire services provided through the Georgia Department of Labor. For both initial and later employees, the GDL screens job applicants according to the company's specifications. At the Parallam plant, groups of fifty or sixty candidates then attend an 18-hour pre-hire program involving company training personnel, supervisory and management staff, and workers already employed. The program is double-sided: the candidates learn about the company's product and processes, and the company has a chance to evaluate the applicants. Those who choose and are chosen to continue the hiring process go through a series of interviews and a pre-employment physical. If they are offered employment and accept, they then are trained by MacMillan Bloedel's own staff for work teams and specific assignments, using materials developed from the technical manuals.

QUICK START AND THE FUTURE

As of July 1990, Parallam's initial employees had been selected, trained, and were on the job. Construction was almost complete; the plant was in production, but was not yet marketing its product. The Quick Start project was winding down, although AATI staff still had a temporary office on site. MacMillan Bloedel had the technical materials (which became its permanent property) on hand to continue its training program. In a recent interview, David Parker, General Manager of the Parallam Division of MacMillan Bloedel Limited, and Richard C. Hunnicutt, Employee Relations Manager at the Colbert plant, agreed that the Quick Start program had proven its value in their own startup, and that they would recommend the program's services to other employers considering locating in Georgia.

Should the company build another plant in Georgia or significantly expand its existing operations, it would be eligible again for Quick Start services. In the meantime, management at the Colbert plant can choose among a variety of continuing industrial training programs offered to all area employers through the Economic Development Services program of Athens Area Technical Institute.

The estimated cost of the Quick Start project at the Parallam Division plant, spread over two fiscal years, was roughly $80,000 — money invested by Georgia to help attract a new manufacturer, product, and jobs to the state. If the composite lumber is as successful as company officials anticipate, more plants will be built, possibly in Georgia or other southeastern states. At full output, company representatives say, the Colbert plant could meet only a fraction of the estimated demand. Moreover, because the process is adaptable to many kinds of fiber, regional planners expect that once the plant is fully operative, visitors from all over the world will come to see its innovative process and product— and thus will see something of Georgia as well.

Preliminary 1990 Census Results: The Limits of the Data

Marie McGrath Libbey

The following article, tables and map are based on preliminary census results for Georgia. The population counts reported undoubtedly will change as normal corrections are made. Because of the preliminary nature of the data, they should be used very carefully. They are best regarded as first approximations rather than the final say on how population changed in Georgia from 1980 to 1990.

State, county, and municipal officials in Georgia and across the nation quickly responded to preliminary population counts from the April 1, 1990 census. After the data were released in mid-August, many city planners and county administrators worked intensively to pinpoint omitted people and housing units. Community officials have used a variety of techniques in building statistical bases for their challenges, including reviews of utility hookups, tax records, housing permit data, meticulous and eye-straining scrutinization of aerial photographs and maps and, in some localities, on-foot surveys of census blocks. The block-by-block listings of housing units given to local governments were especially important in tracking down overlooked or improperly assigned housing tracts and and units.

Disagreement with initial census results is not a new; many localities challenged the 1980 data. Several of the nation's largest cites, fearing severe undercounts, filed a 1987 lawsuit questioning the methodology and data collection procedures used by the Census Bureau. The cities contended that metropolitan areas, the traditional gathering place for minorities, the poor, and the homeless, were especially vulnerable to problems resulting from inaccurate population counts. Eligibility and financing for many federal and state human service programs usually depend on the number of expected or projected recipients. The 1990 counts will reverberate throughout funding formulas for the next decade, since the census will establish the baseline population and housing counts for estimates and projections until the year 2000.

PRELIMINARY RESULTS

The preliminary population count in Georgia reflects national trends: erosion of the rural population base, little or moderate growth in urban areas, and explosive growth in suburban bedroom communities. Table 1 shows estimated population totals (based on the sums of the preliminary county estimates) in Georgia's metropolitan and nonmetropolitan areas. In spite of substantial gains in nonmetropolitan regions, the bulk of Georgia's population continues to settle in and around cities. These numbers are certain to change after the normal post-

CAUTIONARY NOTE

As a condition of receipt, users sign a memorandum acknowledging that the data are partial, preliminary, generated solely for use in coverage improvement operations, and likely to change after the post-census local review and other enumeration and coverage activities have been completed. Users also agree to several other conditions: (1) the data are released for informational purposes only, and that the Census Bureau neither encourages nor sanctions the use of this data set for official purposes, such as budgeting or redistricting activities; (2) the Census Bureau will not answer inquiries about the content of the results, nor speculate on final census results.

Table 1

Preliminary Estimates,
Georgia Metropolitan and Nonmetropolitan Populations, 1980 and 1990[a]

Place	Population		Population Change		Percentage Distribution		
	1980 (Census)	1990 (Preliminary)	1980 to 1990 Number	Percent	1980 (Census)	1990 Preliminary	Population Change '80 to '90
Metropolitan	3,402,601	4,158,208	755,607	22.2	62.3	65.1	81.8
Nonmetropolitan	2,060,381	2,229,312	168,931	8.2	37.7	34.9	18.3
Georgia	5,462,982	6,386,948[b]	923,966[c]	16.9	100.0	100.0	100.0

[a] Metropolitan counties as defined by the U.S. Office of Management and Budget, June 30, 1989. 1980 counts include corrections to the 1980 census; the preliminary 1990 counts are based on the June 30, 1989 area definitions.

[b] Metropolitan and nonmetropolitan areas for 1990 do not sum to the Georgia total due to preliminary nature of data; metropolitan equals sum of metropolitan counties; nonmetropolitan equals sum of nonmetropolitan counties; state total is preliminary count as provided by Bureau of the Census.

[c] Difference between final 1980 Georgia total count and preliminary 1990 Georgia total count.

Source: U.S. Department of Commerce, Bureau of the Census, Atlanta Regional Office, unpublished data, December, 1989; U.S. Department of Commerce, Bureau of the Census, Postcensus Local Review Data, August 1990; metropolitan and nonmetropolitan calculations by Selig Center for Economic Growth, College of Business Administration, The University of Georgia, Athens, Georgia.

census corrections and the ensuing MSA redefinitions. As more people settle in outlying areas and become long distance commuters, more counties will acquire MSA status, with the metropolitan sector encompassing a proportionally larger sector of the state's population. For example, Hall County, currently a nonmetropolitan county, is likely either to merge into one of the adjoining MSAs (Atlanta or Athens) or to become a separate MSA of its own, with Gainesville as its central city.

The map illustrates preliminary county population percentage changes between 1980 and 1990. Of the 39 counties exhibiting growth rates above the state average of 16.9 percent, 31 counties were in the northern half of the state, with 14 of these counties in the Atlanta MSA. A second area of substantial growth is along the southeastern coastal area. Camden County topped the percentage change list, increasing 122.2 percent, from 13,371 in 1980 to 29,706 in 1990. The large percentage gains along the southeastern coast are the result of substantial growth from relatively small 1980 base populations. Except for Liberty and Bulloch counties, the six counties in southern Georgia that grew above the state average had 1980 populations between 4,524 (Long County) and 18,327 (Effingham County). The heavy shading of the counties surrounding the cities of Atlanta and Savannah illustrates the growth of suburban MSA areas. The counties with large percentage losses in population in the southwest corner and throughout the coastal plains are shown as unshaded.

Table 2 lists the 20 largest, as well as the 20 fastest growing counties in the state, based on numerical gains and percentage growth. Fulton, which includes most of the city of Atlanta and is the state's most populous county, added 45,632 residents. Based on preliminary data, the increase should indicate a burgeoning suburban population. Atlanta, in addition to 112 other Georgian cities and 21 counties, has filed a challenge to the preliminary results. According to the April 1 count, Atlanta had a population of 384,153 residents, considerably less than 425,022 residents counted in 1980.

DeKalb County, Georgia's second largest, grew by 11.9 percent and added 57,665 residents. Cobb County, with 445,580 residents, posted a 49.7 percent increase to make it Georgia's third largest county. Gwinnett County perhaps benefitted the most in the population sweepstakes, gaining 184,378 residents, the largest county growth in Georgia, yielding a 110.2 percent increase.

Heavily populated counties in the southern part of the state did not post the large percentage gains seen in northern Georgia. Chatham's 216,414 residents represented only a 7 percent increase over its 1980 population. Muscogee County gained 6,575 residents, a 3.9 percent increase over its 1980 base, while the preliminary data show Bibb County, with an estimated 1990

Table 2

Rankings of Georgia's Largest and Fastest Growing Counties, 1980-1990
Based on Preliminary 1990 Census Results

Rank	County	Preliminary Census Count April 1, 1990	County	Percentage Change, 1980-1990	County	Population Increase, 1980-1990
1	Fulton	635,536	Camden	122.2	Gwinnett	184,378
2	DeKalb	540,689	Gwinnett	110.5	Cobb	147,862
3	Cobb	445,580	Fayette	110.2	DeKalb	57,665
4	Gwinnett	351,186	Dawson	96.0	Fulton	45,632
5	Chatham	216,414	Cherokee	69.3	Cherokee	35,811
6	Richmond	188,118	Columbia	61.4	Fayette	31,996
7	Clayton	179,127	Paulding	57.2	Clayton	28,770
8	Muscogee	176,683	Henry	57.1	Columbia	24,639
9	Bibb	149,123	Forsyth	54.4	Henry	20,744
10	Dougherty	94,460	Cobb	49.7	Hall	16,629
11	Hall	92,278	Bryan	48.5	Camden	16,335
12	Houston	88,528	Rockdale	43.3	Rockdale	15,848
13	Cherokee	87,510	Oconee	40.3	Douglas	15,610
14	Clarke	85,656	Effingham	39.3	Forsyth	15,220
15	Floyd	80,040	Barrow	38.0	Paulding	14,935
16	Lowndes	74,672	Liberty	37.9	Bartow	14,754
17	Whitfield	71,080	Coweta	36.5	Carroll	14,708
18	Carroll	71,054	Bartow	36.2	Coweta	14,337
19	Douglas	70,183	Long	36.1	Liberty	14,239
20	Columbia	64,757	Lee	35.4	Chatham	14,188

Source: U.S. Department of Commerce, Bureau of the Census, 1990 Decennial Census, Preliminary Housing and Population Counts, August 16,1990; rankings, population changes and percentage changes computed by the Selig Center for Economic Growth, College of Business Administration, The University of Georgia, Athens, Georgia.

population of 149,123, losing 1,133 residents over the last decade.

The preliminary count also indicates that 49 counties lost population since 1980. As detailed on the map, most of these counties are in the southwestern and middle Georgia agricultural regions. The largest of these losses occurred in Chattahoochee County, which dropped by 23 percent or 5,003 residents, and in Dougherty County, which lost 6,250 residents, a decline of 6.2 percent from its 1980 population base.

Table 3 lists all of Georgia's counties by their final 1980 census counts, preliminary 1990 counts, and the percentage changes based on this preliminary data.

LOOKING FORWARD

Although serious concerns about population gains and losses in specific localities will remain, these preliminary census results provide government officials with their first actual head count since 1980. As these data are revised and refined, researchers and governmental agencies will be better able to analyze the changing national and state demographic pictures. Business persons can look forward to the many studies that will emerge from the census results. With reports detailing changes and trends in age, race, occupation, income, and housing, businesses will gain more accurate demographic data on which to base their strategies.

Table 3

Preliminary 1990 Population Estimates, and Percentage Change from 1980, Georgia and Georgia Counties

County	April 1, 1990 Census Count	April 1, 1990 Preliminary Census Count	% change 1980-1990	County	April 1, 1990 Census Count	April 1, 1990 Preliminary Census Count	% change 1980-1990
Appling	15,565	15,679	0.7	Dade	12,318	13,053	6.0
Atkinson	6,141	6,183	0.7	Dawson	4,774	9,355	96.0
Bacon	9,379	9,500	1.3	Decatur	25,495	24,819	-2.7
Baker	3,808	3,564	-6.4	Dekalb	483,024	540,689	11.9
Baldwin	34,686	37,611	8.4	Dodge	16,955	16,977	0.1
Banks	8,702	10,092	16.0	Dooly	10,826	9,780	-9.7
Barrow	21,354	29,462	38.0	Dougherty	100,710	94,460	-6.2
Bartow	40,760	55,514	36.2	Douglas	54,573	70,183	28.6
Ben Hill	16,000	15,995	0.0	Early	13,158	11,674	-11.3
Berrien	13,525	14,011	3.6	Echols	2,297	2,304	0.3
Bibb	150,256	149,123	-0.8	Effingham	18,327	25,537	39.3
Bleckley	10,767	10,392	-3.5	Elbert	18,758	18,667	-0.5
Brantley	8,701	10,942	25.8	Emanuel	20,795	20,062	-3.5
Brooks	15,255	14,748	-3.3	Evans	8,428	8,496	0.8
Bryan	10,175	15,105	48.5	Fannin	14,748	15,911	7.9
Bulloch	35,785	42,549	18.9	Fayette	29,043	61,039	110.2
Burke	19,349	20,369	5.3	Floyd	79,800	80,040	0.3
Butts	13,665	15,027	10.0	Forsyth	27,958	43,178	54.4
Calhoun	5,717	4,924	-13.9	Franklin	15,185	16,460	8.4
Camden	13,371	29,706	122.2	Fulton	589,904	635,536	7.7
Candler	7,518	7,692	2.3	Gilmer	11,110	13,054	17.5
Carroll	56,346	71,054	26.1	Glascock	2,382	2,353	-1.2
Catoosa	36,991	42,246	14.2	Glynn	54,981	61,670	12.2
Charlton	7,343	8,417	14.6	Gordon	30,070	35,035	16.5
Chatham	202,226	216,414	7.0	Grady	19,845	19,941	0.5
Chattahoochee	21,732	16,729	-23.0	Greene	11,391	11,430	0.3
Chattooga	21,856	22,130	1.3	Gwinnett	166,808	351,186	110.5
Cherokee	51,699	87,510	69.3	Habersham	25,020	27,522	10.0
Clarke	74,498	85,656	15.0	Hall	75,649	92,278	22.0
Clay	3,553	3,420	-3.7	Hancock	9,466	8,394	-11.3
Clayton	150,357	179,127	19.1	Haralson	18,422	21,745	18.0
Clinch	6,660	6,073	-8.8	Harris	15,464	17,545	13.5
Cobb	297,718	445,580	49.7	Hart	18,585	19,597	5.4
Coffee	26,894	29,269	8.8	Heard	6,520	8,568	31.4
Colquitt	35,376	35,573	0.6	Henry	36,309	57,053	57.1
Columbia	40,118	64,757	61.4	Houston	77,605	88,528	14.1
Cook	13,490	13,470	-0.1	Irwin	8,988	8,560	-4.8
Coweta	39,268	53,605	36.5	Jackson	25,343	29,246	15.4
Crawford	7,684	8,836	15.0	Jasper	7,553	8,361	10.7
Crisp	19,489	19,364	-0.6	Jeff Davis	11,473	11,981	4.4

(continued)

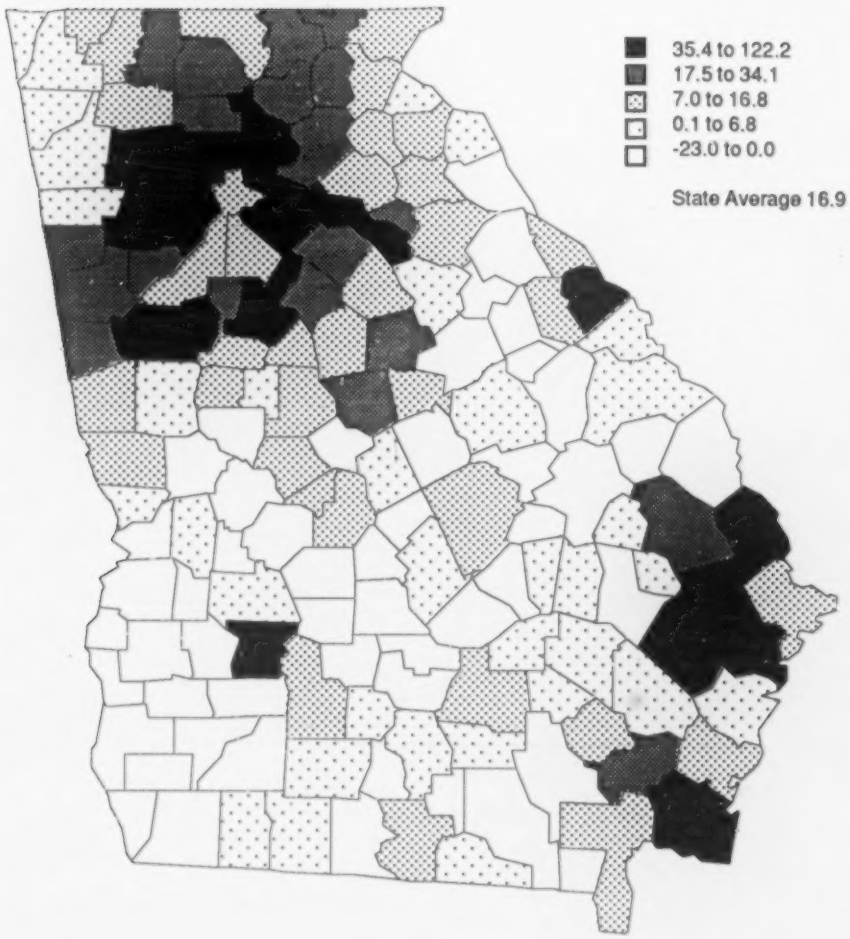
Table 3 (Continued)

County	April 1, 1990 Census Count	April 1, 1990 Preliminary Census Count	% change 1980-1990	County	April 1, 1990 Census Count	April 1, 1990 Preliminary Census Count	% change 1980-1990
Jefferson	18,403	17,320	-5.9	Richmond	181,629	188,118	3.6
Jenkin	8,841	8,186	-7.4	Rockdale	36,570	52,418	43.3
Johnson	8,660	8,290	-4.3	Schley	3,433	3,411	-0.6
Jones	16,579	20,262	22.2	Screven	14,043	13,806	-1.7
Lamar	12,215	12,889	5.5	Seminole	9,057	8,928	-1.4
Lanier	5,654	5,471	-3.2	Spalding	47,899	53,355	11.4
Laurens	36,990	39,784	7.6	Stephens	21,761	22,579	3.8
Lee	11,684	15,822	35.4	Stewart	5,896	5,166	-12.4
Liberty	37,583	51,822	37.9	Sumter	29,360	29,660	1.0
Lincoln	6,716	7,315	8.9	Talbot	6,536	6,437	-1.5
Long	4,524	6,158	36.1	Taliaferro	2,032	1,761	-13.3
Lowndes	67,972	74,672	9.9	Tattnall	18,134	17,611	-2.9
Lumpkin	10,762	14,228	32.2	Taylor	7,902	7,543	-4.5
McDuffie	18,546	19,977	7.7	Telfair	11,445	10,980	-4.1
McIntosh	8,046	8,561	6.4	Terrell	12,017	9,792	-18.5
Macon	14,003	12,917	-7.8	Thomas	38,098	38,249	0.4
Madison	17,747	20,723	16.8	Tift	32,862	33,554	2.1
Marion	5,297	5,481	3.5	Toombs	22,592	23,823	5.4
Meriwether	21,229	22,246	4.8	Towns	5,638	6,715	19.1
Miller	7,038	6,225	-11.6	Treutlen	6,087	5,840	-4.1
Mitchell	21,114	19,866	-5.9	Troup	50,003	54,957	9.9
Monroe	14,610	16,892	15.6	Turner	9,510	8,499	-10.6
Montgomery	7,011	7,114	1.5	Twiggs	9,354	9,608	2.7
Morgan	11,572	12,744	10.1	Union	9,390	11,893	26.7
Murray	19,685	25,526	29.7	Upson	25,998	25,979	-0.1
Muscogee	170,108	176,683	3.9	Walker	56,470	57,897	2.5
Newton	34,666	41,018	18.3	Walton	31,211	37,998	21.7
Oconee	12,427	17,432	40.3	Ware	37,180	34,959	-6.0
Oglethorpe	8,929	9,692	8.5	Warren	6,583	5,974	-9.3
Paulding	26,110	41,045	57.2	Washington	18,842	18,948	0.6
Peach	19,151	20,536	7.2	Wayne	20,750	22,170	6.8
Pickens	11,652	14,359	23.2	Webster	2,341	2,218	-5.3
Pierce	11,897	13,253	11.4	Wheeler	5,155	4,878	-5.4
Pike	8,937	10,122	13.3	White	10,120	12,985	28.3
Polk	32,382	33,648	3.9	Whitfield	65,775	71,080	8.1
Pulaski	8,950	7,931	-11.4	Wilcox	7,682	6,464	-15.9
Putnam	10,295	13,807	34.1	Wilkes	10,951	10,483	-4.3
Quitman	2,357	2,175	-7.7	Wilkinson	10,368	10,198	-1.6
Rabun	10,466	11,547	10.3	Worth	18,064	19,400	7.4
Randolph	9,599	7,762	-19.1	Georgia	5,462,982	6,386,948	16.9

Note: Sum of counties does not equal state total due to preliminary nature of data.

Source: U.S. Department of Commerce, Bureau of the Census, Atlanta Regional Office, unpublished data, December, 1989; U.S. Department of Commerce, Bureau of the Census, Postcensus Local Review Data, August 1990; percentage calculations by Selig Center for Economic Growth, College of Business Administration, The University of Georgia, Athens, Georgia.

Preliminary Estimates of Percentage Changes in Population, Georgia Counties, 1980-1990



Source: Based on data from U. S. Department of Commerce, Bureau of the Census, August 1990. Base data are preliminary and subject to revision and/or correction.

GEORGIA BUSINESS STATISTICS

SERIES	JULY 1990	JUNE 1990	MAY 1990	JULY 1989
Georgia Leading Indicators Index[1] (1969=100)	176.27	174.62	175.45	178.04
Georgia Coincident Indicators Index[1] (1969=100)	631.81	634.56	636.68	602.02
Nonagricultural Employment[2] (thousands)	3,008.2	3,021.6	3,016.0	2,950.3
Manufacturing Employment[2] (thousands)	580.2	585.0	584.2	570.0
Average Weekly Earnings, Manufacturing[2] (dollars)	378.31	377.98	372.10	361.21
Help Wanted Advertising, Atlanta Index[3] (1987=100)	196	185	178	230
Taxable Retail Sales[4] ($ millions)	3,774.1	4,174.0	4,059.1	3,458.7
Building Permits[5]				
Residential Housing Units, Private (thousands)	3.2	3.3	3.5	3.7
Value of Residential Housing ($ thousands)	213,517	217,447	238,337	229,178
Value of Nonresidential Construction ($ thousands)	161,381	225,176	215,085	145,072
Industrial Buildings	25,400	12,671	4,330	9,931
Office, Bank and Other Professional Buildings	14,952	58,348	17,753	14,590
Stores and Other Mercantile Buildings	39,284	44,087	39,942	26,249
Other	81,745	110,070	153,060	94,302
Consumer Price Index[6] (CPI-U, all items)				
South U.S. (1982-84 = 100)	127.8	127.3	126.5	–
South/Population more than 1,200,000	128.8	127.8	127.1	–
South/Population 450,000 - 1,200,000	128.8	128.2	128.0	–
South/Population 50,000 - 450,000	126.0	125.3	124.5	–
South/Population Less than 50,000	128.0	128.2	125.8	–
Atlanta (1982-84=100)[a]	130.8[b]	–	–	124.9[b]
Prices Received by Farmers, Georgia Index[7] (1977=100)	138[r]	137[r]	137	134
	1990:I	1989:IV	1989:III	1989:I
Total Personal Income[8] ($ millions)	108,745	105,990	104,320	101,435

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[1] Georgia Economic Forecasting Project, Selig Center for Economic Growth, College of Business Administration, University of Georgia. Initial monthly values subject to revision.

[2] Labor Information Systems, Georgia Department of Labor.

[3] Series published by The Conference Board, Inc.

[4] Derived by the Selig Center for Economic Growth, College of Business Administration, University of Georgia, from data of the Sales and Use Tax System, Georgia Department of Revenue.

[5] U.S. Department of Commerce, Bureau of the Census.

[6] U.S. Department of Labor, Bureau of Labor Statistics, Southeastern Regional Office.

[7] Georgia Department of Agriculture, Georgia Agricultural Statistics Service.

[8] U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System.

[a] Atlanta index is average of each 6 months of the calendar year; base revised to 1982-84=100 as of January 1, 1988.

[b] Data are for 1st half, 1990, and 1st half, 1989, respectively.

[r] Revised

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GEORGIA BUSINESS AND ECONOMIC CONDITIONS

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The Declining Burden of the Georgia Motor Fuel Tax

Charles F. Floyd and Marcus T. Allen

The Georgia motor fuel tax, combined with federal-aid highway funds, provides the overwhelming proportion of monies used for building and maintaining the state highway network. The amount of federal funding has declined with the completion of Georgia's interstate system, and although it may increase again when the national highway program is reauthorized in 1992, Georgia must count on its own motor fuel tax to meet the greater part of its highway needs.

At current levels, however, many contend the tax is not adequate to maintain the existing system, provide additional capacity to handle increased traffic, and assist the economic development of the state's lagging regions. In fact, after providing for necessary maintenance expenses, the Georgia motor fuel tax even may be inadequate to furnish sufficient matching funds if federal-aid highway allocations are increased significantly. Furthermore, the state now spends approximately $120 million annually in general fund revenues for highway purposes, and other extremely pressing needs for education, prisons, and other general fund expenditures have intensified the pressure to shift the entire burden of highway financing onto highway user fees.

In view of these issues, this article examines several related questions regarding the burden of the Georgia motor fuel tax. In particular:

- What has happened to the level of Georgia motor fuel tax collections in comparison with other major state sources of tax revenues?
- What is the relative purchasing power of funds provided by the motor fuel tax compared to earlier years?
- What is the current "burden" of the motor fuel tax on the average Georgia motorist compared to earlier years?
- How does the Georgia motor fuel tax rate compare with that in other states?

STATE REVENUE COLLECTIONS 1962-1989

Georgia's state revenue collections by major source for fiscal years 1962-1990 are presented in Table 1 and Figure 1. Motor fuel tax collections increased from $89.5 million in 1962 to an estimated $328.1 million in 1990, an average annual compound growth rate of nearly 5 percent. Since 1980, however, they have increased at an average annual rate of only 1.4 percent, far below both the rate of increase in highway usage (motor vehicle miles) and the rates of both general inflation and highway construction costs.

Motor fuel tax collections also have increased far more slowly than those of the state's other major revenue sources. The tax comprised 23.3 percent of state government revenue collections in 1962, but this percentage had fallen to only 6.5 percent by 1990.

General Sales Tax Collections. The two major sources of Georgia tax revenue that have shown relatively rapid growth are the general sales tax and the personal income tax. Sales tax collections have increased not only because of growth in sales volume, but also because of increases in prices.

The state sales tax rate remained constant at 3 percent of sales from 1951 to 1989, when it was increased to 4 percent. In 1979, the 3 percent sales tax on motor fuels was dedicated to transportation, but all of the 1 percent increase in 1989 goes into the general fund. Pictured against this somewhat confusing background, general fund sales tax collections increased from $157.3 million in 1962 to an estimated $2.5 billion in 1990. The general sales tax as a percent of total revenues was 36.7 percent in fiscal 1990, approximately the same level as in 1970. As Table 2 shows, it also has remained approximately constant as a percentage of total Georgia personal income, slightly over 2 percent.

Personal Income Tax Collections. The personal income tax has exhibited by far the largest growth of any major source of state government revenues, increasing at an average annual compound rate of over 16 percent since 1962, with total collections more than tripling during the past decade. As a percentage of total state tax revenues, the personal income tax grew from 11.4 percent in 1962 to 42.6 percent in 1990. These large increases have occurred because (1) the level of Georgia personal income has risen with both growth in the state's economy and inflation, and (2) "bracket creep" has forced more taxpayers into the higher income tax brackets.

Therefore, the two major sources of Georgia state government revenues have grown along with, and even faster than, escalations in prices and incomes. Obviously, the state government would have been unable to even begin to meet its obligations if the general sales tax and the personal income tax had been tied to some previous level of prices and incomes.

THE MOTOR FUEL TAX

The state's motor fuel tax consists of a gallonage tax of 7.5 cents, and a 3 percent sales tax on the sales price (excluding the 9 cent federal and 7.5 cent state motor fuel taxes.) Thus, the exact amount of tax paid by the individual motorist depends on the grade and price of the fuel purchased. At a price of 95 cents, the tax is 9.9 cents per gallon; at $1.25, the tax is 10.8 cents per gallon.

With a constant tax rate, several factors influence the level of motor fuel tax collections, including level of highway usage, changes in motor fuel prices, and increased fuel efficiency of vehicles.

Level of Highway Usage. Other things being equal, the higher the level of highway usage, the higher the level of motor fuel tax collections. Vehicle miles traveled on Georgia highways increased from 17.9 billion miles in 1962 to 64.9 billion in 1989. They grew 64.9 percent between 1980 and 1989, compared to an increase in motor fuel tax collections of only 11.2 percent.

Motor Fuel Price Changes. Changes in motor fuel prices affect the amount of sales tax per gallon. The average cost of unleaded gasoline rose from 36.1 cents to $1.38 per gallon between 1972 and 1982, declined to 79.9 cents in 1986, and has risen once again to over $1 since that time. These price fluctuations brought attendant fluctuations in motor fuel sales tax collections, from $129 million in 1980 down to $80.3 million in 1987, and back up to $110.1 million in 1990.

Fuel Efficiency. The primary reason that increases in motor fuel tax collections have not kept up with highway usage is the greatly increased efficiency of automobiles. The data in Table 3 indicate that the average miles per gallon for new cars reached a low of 12.8 in 1974. Since that time, this figure has increased to 27 miles per gallon, meaning that the average new car now uses less than half the fuel per mile compared to the average new car of 1974. It also means that the average Georgia motor fuel tax cost per gallon has declined by approximately 40 percent, from .61 cents per mile in 1972 to .40 cents in 1989.

RELATIVE PURCHASING POWER OF THE GAS TAX

In order to support the same level of highway services, the motor fuel tax must climb fast enough to cover both increases in highway usage and increases in the cost of highway construction and maintenance. It is not doing so in Georgia. The data in Table 4 show that even with the addition of the 3 percent sales tax, the amount of motor fuel tax collected per 1,000 vehicle miles of travel is approximately the same today as it was in 1974, primarily because of increased fuel efficiency.

Unfortunately, highway construction and maintenance costs have increased greatly during recent years. According to the Federal Highway Administration, construction costs on federal aid projects increased 87 percent between 1977 and 1989. If we convert Georgia motor fuel tax collections and revenues per mile of travel to "constant 1977 dollars," that is, to reflect the FHWA Construction Cost Index with a 1977 base, we see that "real" motor fuel tax revenues peaked in 1972 at $325.5 million and had fallen to $226.8 million by 1989. "Real" revenues per 1,000 vehicle miles of travel have decreased by 70 percent, from 1.3 cents per 1,000 VMT in 1962 to .35

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Table 1

Georgia Revenue Collections by Source 1962-1989
(millions of dollars)

Fiscal Year	Motor Fuel Taxes	3% Sales Tax on Motor Fuel	Total Motor Fuel Revenue	General Sales Taxes (non-M.F.)	Personal Income Taxes	Corporate Income Taxes	Other Revenues	Total State Revenues
1962	89.5		89.5	157.3	43.7	24.8	68.4	383.7
1963	94.0		94.0	172.0	49.4	36.0	71.1	422.5
1964	99.8		99.8	185.4	56.0	41.0	86.0	468.2
1965	106.9		106.9	207.6	64.3	48.1	96.7	523.6
1966	114.5		114.5	227.2	80.3	61.6	102.0	585.6
1967	122.4		122.4	241.8	100.6	67.2	109.2	641.2
1968	131.0		131.0	271.2	116.0	66.2	118.9	703.3
1969	141.8		141.8	308.0	139.2	76.1	130.0	795.1
1970	154.5		154.5	335.8	185.0	88.1	140.9	904.3
1971	165.5		165.5	361.2	183.4	85.4	153.7	949.2
1972	209.0		209.0	425.4	239.9	92.6	178.2	1145.1
1973	226.2		226.2	477.2	285.1	117.5	193.0	1299.0
1974	230.0		230.0	537.3	340.7	137.0	209.9	1454.9
1975	227.0		227.0	563.7	373.5	122.7	198.7	1485.6
1976	233.0		233.0	618.8	413.0	138.7	204.5	1608.0
1977	243.7		243.7	686.3	495.6	177.0	223.9	1826.5
1978	256.0		256.0	791.3	604.1	210.1	232.7	2094.2
1979	264.5	30.5	295.0	830.7	729.5	233.2	265.5	2353.9
1980	252.2	129.3	381.5	747.4	872.8	247.0	376.1	2624.8
1981	245.2	141.9	387.1	824.6	1,037.2	260.6	402.0	2911.5
1982	244.4	103.6	348.0	981.8	1,181.8	278.1	371.9	3161.6
1983	249.3	101.2	350.5	1,068.5	1,342.1	248.9	379.3	3389.3
1984	264.6	103.7	368.3	1,253.5	1,466.1	327.0	403.7	3818.6
1985	277.3	103.7	381.0	1,425.3	1,718.3	430.5	418.9	4374.0
1986	287.9	102.1	390.0	1,530.8	1,944.3	431.7	442.2	4739.0
1987	302.5	80.3	382.8	1,651.7	2,149.2	463.4	443.5	5090.6
1988	317.4	92.5	409.9	1,755.9	2,391.8	493.9	481.2	5532.7
1989	327.9	96.3	424.2	1,920.2	2,731.8	542.2	450.4	6068.8
1990	328.1	110.1	438.2	2,476.5	2,867.7	496.6	450.7	6,729.7

Note: "Other revenues" include tag and title fees; taxes on tobacco, alcohol, property, and estates; plus miscellaneous taxes.

Source: Georgia Department of Revenue. 1990 data are estimates derived from preliminary Georgia Department of Revenue Data.

cents in 1989. In other words, when current Georgia state highway tax revenues are adjusted for increased travel and rising highway construction costs, they have fallen to only 72 percent of the 1980 level, and only 28 percent that in 1962.

THE RELATIVE MOTOR FUEL TAX BURDEN

Except for slight increases in 1972, when the gallonage tax was last raised, and in 1979, when the 3 percent tax on motor fuels was dedicated to transportation, Georgia motor fuel tax revenues as a percentage of total personal income have dropped steadily, from 1.2 percent in 1962 to only .4 percent in 1989. By comparison, personal income taxes increased from .6 percent of Georgia total personal income in 1962 to 2.6 percent in 1989.

The Georgia motor fuel tax cost per mile of travel for the individual motorist depends on many factors, primarily the vehicle's fuel efficiency and the price of fuel. For an "average" motorist who pays the average price for gas and whose automobile achieves the average miles per gallon for the average new car, the Georgia motor fuel tax cost per mile has dropped from a high of .68 of a cent in 1974 to .40 in 1989. In other words, this average motorist now pays approximately one-half the motor fuel tax per mile he paid in 1974.

This, of course, is not the entire story. Prices and incomes have risen during the analysis period. According to the U.S. Department of Labor, consumer prices in 1989 were over three times the 1972 level. If the Georgia motor fuel tax cost per mile is adjusted to reflect the impact of inflation, the "real" cost in

FIGURE 1

GEORGIA REVENUE COLLECTIONS BY MAJOR SOURCE 1962-1990

1989 was slightly more than one-fifth the 1972 level.

COMPARISONS WITH OTHER STATES

Another measure of the burden of the Georgia motor fuel tax is to compare its rate with those imposed by other states. From data prepared by the Washington, D.C.-based Highway Users Federation that are presented in Table 5, we see that the Georgia motor fuel tax rate is the third lowest in the nation. Only Alaska and Wyoming have lower rates, and both states depend heavily on other petroleum taxes to fund their highway programs. As a practical matter, the Georgia motor fuel tax is the nation's lowest. Every state except Alaska and Georgia raised its motor fuel tax rates during the past decade. Thirty states had rate increases in the last two years.

As Figure 2 depicts, all the other southeastern states have a motor fuel tax above 15 cents per gallon. Moreover, all gain significant highway funding from other sources such as license fees and minerals severance taxes.

SUMMARY

Unlike other major sources of Georgia state government revenue, revenues from the motor fuel tax have not increased as rapidly as demand for services or rates of inflation. Furthermore, in contrast to other major sources of state government revenue, the burden of the tax on the average motorist, particularly in real terms, has fallen considerably in recent years and is far below that in other states. It is apparent that either Georgia must raise its rate of taxes on motor fuel use significantly, or it must accept a greatly reduced highway construction and maintenance program in the future.

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Tables 2-5 and Figure 2 follow on pages 18-21

Women's Employment, Pay, and Incomes in Georgia: Recent Evidence

Rudolph A. White and Suzanne A. Lindsay

During the 1980s, the U.S. economy enjoyed its longest peacetime period of sustained prosperity in this century. Georgia's economy also expanded at its highest historical rates of growth, with population, employment, and incomes standing at record levels. As a result, the state's per capita income grew at an annual average rate of 7.8 percent, rising from 84 percent of the national average in 1980 to 93 percent in 1988.

An important force behind the Georgia's employment growth during the 1980s — and hence, a direct influence on personal income — has been the increasing labor force participation of women. In 1980, 52.7 percent of the almost 2.1 million women aged 16 and over in Georgia's civilian noninstitutional population were in the labor force; just over 49 percent of the total group were employed. By 1988, the group had grown to an estimated 2.5 million, with 59.7 percent in the civilian labor force and 55.8 percent employed (Table 1). During the same period, civilian labor force and employment totals for all workers and for men alone grew much less rapidly.

A variety of questions related to women's increasing importance in the work force drew public attention during the '80s. Most will surface again in this decade: To what extent is economic development contingent on women's increasing labor force participation? Have women's gains in employment been reflected in higher pay and incomes, relative to men? What are the implications of employment and income changes, given the sociology of today's families (where prosperity and poverty are intimately linked to educational achievement and school dropout rates among parents and single-parent households headed by females, which have increased substantially)?

This article examines some of the current information on women's employment, pay, and incomes in Georgia. Because state estimates are not always available, it will include information for the U.S. as a whole, where labor force trends are likely to hold for both state and nation.

CURRENT STUDIES OF WOMEN'S PAY AND INCOMES

Although the 1990 Census of Population included detailed questions on income and pay, by age, race, sex, and occupation, the reports will not be available for several years. In the meantime, the U.S. Census Bureau's Current Population Survey (CPS), conducted in cooperation with the Bureau of Labor Statistics, offers data on income and earnings from a monthly nationwide household survey, including about 59,500 household units in 1987 and 55,800 in 1988. The sample represents the U.S. civilian noninstitutional population, for whom both monthly labor force data and periodic supplemental data on work experience, income, non-cash benefits, migration, education and other topics are collected. The data are contained on machine-readable tapes; relatively detailed U.S. and regional totals are published routinely, but few state data are in print.

In late 1985, the survey sample was redesigned to be statistically representive of each state as well as the nation. Currently, over 800 Georgia households are interviewed monthly, yielding data on nearly 2,000 persons. About a third of the sample are children and Armed Forces personnel for whom full records are not made. The annual income/earnings data reported for Georgia in this study are generated from the CPS March Annual Demographic file. Additional information, such as U.S. pay rates for hourly-paid and salaried workers, is taken from the CPS Earnings file, which covers one-quarter of each month's sample and is collected every month in the year. For each file, samples for 1987 and 1988 have been combined to increase the reliability of the estimates. It should be noted, however, that in some instances the sub-sample size is quite small; this limitation substantially reduces the state detail that is reported in this article.

Summary state employment data based on the CPS are reported annually in the U.S. Bureau of Labor Statistics' *Geographic Profile of Employment and Unemployment*, and are included here to supplement data derived from the tape files.

Table 1

Persons Aged 16 and Over, by Sex and Employment Status, Georgia, 1980 and 1988 (persons in thousands)

Persons Aged 16 and Over	1980	1988	% Change 1980-88
Both sexes			
Civilian noninstitutional population	3,900	4,693	20.3
In civilian labor force	2,481	3,192	28.6
Employed	2,336	3,007	28.7
Unemployed	145	185	27.6
Civilian labor force as % of population	63.6	68.0	6.9
Employment as % of population	59.9	64.1	7.0
Women			
Civilian noninstitutional population	2,090	2,514	20.3
In civilian labor force	1,102	1,500	36.1
Employed	1,026	1,403	36.7
Unemployed	76	97	27.6
Civilian labor force as % of population	52.7	59.7	13.2
Employment as % of population	49.1	55.8	13.6
Men			
Civilian noninstitutional population	1,810	2,179	20.4
In civilian labor force	1,378	1,692	22.8
Employed	1,310	1,603	22.4
Unemployed	70	89	27.1
Civilian labor force as % of population	76.2	77.7	2.0
Employment as % of population	72.4	73.6	1.7

Note: 1980 values rounded to thousands; subtotals may not add to totals.

Source: Based on U.S. Bureau of the Census, *1980 Census of Population*, Characteristics of the Population, General Social and Economic Characteristics, Georgia; U.S. Bureau of Labor Statistics, *Geographic Profile of Employment and Unemployment, 1988*. Percentages computed by Selig Center for Economic Growth.

WOMEN'S EMPLOYMENT IN GEORGIA: BY INDUSTRY

Important differences in the distribution of Georgia's male and female civilian employment appear across broad groupings by both industry and occupation, although the state's pattern is similar to national distributions in many respects. As Table 2 shows, in 1988, Georgia's women were more likely than its men to work in government (18.5 percent versus 11.7 percent), nondurable manufacturing industries (13.1 percent compared to 11.5 percent), trade (19.5 percent compared to 18.5 percent), finance, insurance, and real estate (8.9 percent for females and 3.8 percent for males), and services (22.4 percent versus 13.3 percent), but less likely to work in agriculture, construction, manufacturing as a whole and durable goods manufacturing in particular, and the transportation, communications, and public utilities sector. The state's percentage distribution of employment within each sex is roughly similar to that for the nation as a whole in most industries; the largest differences appear between U.S. and Georgia women in nondurable manufacturing and government. It should be noted that differences in the state and national definitions of government employment affect both that sector and the distributions as a whole, making comparisons of the U.S. and Georgia rates for either sex in this sector somewhat less clear. Data by sex within each geographic area are comparable, however.

Looking at Georgia women's employment rates by industry as a percentage of their male cohorts' also illuminates differences by sex. In 1988, the state's women were employed in construction at about 17 percent of the men's rate, in

Table 2

Percentage Distribution of Employed Civilians in the U.S. and Georgia, by Industry and Sex, 1988, with Differences by Sex (based on annual averages in thousands)

Industry	Total		Men		Women	
	U.S.	Georgia	U.S.	Georgia	U.S.	Georgia
Total employed (thousands)[a]	114,968	3,007	63,273	1,603	51,696	1,403
Total (percent)	100.0	100.0	100.0	100.0	100.0	100.0
Total nonagricultural industries[b]	97.2	97.2	96.1	97.1	98.7	97.2
Private nonagricultural wage/salary workers[c]	75.1	75.9	76.2	77.8	73.8	73.8
Construction	4.9	5.8	8.0	9.6	1.1	1.6
Manufacturing	18.1	20.4	22.0	23.1	13.3	17.4
Durable	10.7	8.2	14.2	11.6	6.4	4.3
Nondurable	7.4	12.3	7.8	11.5	6.8	13.1
Transportation, communications, public utilities	5.3	6.9	7.0	9.4	3.4	4.0
Trade (wholesale/retail)	18.8	19	17.8	18.5	20.0	19.5
Finance, insurance,	6.2	6.2	4.3	3.8	8.5	8.9
Services[d]	19.8	17.6	14.2	13.3	26.7	22.4
Government	4.7	14.9	4.9	11.7	4.5	18.5
Agriculture	2.8	1.9	3.9	2.7	1.3	0.9

Industry	Women's Rate Compared to Men's (% point difference)		Women's Rate as % of Men's Rate	
	U.S.	Georgia	U.S.	Georgia
Total employed (thousands)[a]	na	na	na	na
Total (percent)	na	na	na	na
Total nonagricultural industries[b]	2.6	0.1	102.7	100.1
Private nonagricultural wage/salary workers[c]	-2.4	-4.0	96.9	94.9
Construction	-7.0	-8.0	13.3	16.7
Manufacturing	-8.7	-5.7	60.4	75.3
Durable	-7.7	-7.3	45.5	37.1
Nondurable	-1.0	1.6	87.5	113.9
Transportation, communications, public utilities	-3.6	-5.4	48.4	42.6
Trade (wholesale/retail)	2.2	1.0	112.2	105.4
Finance, insurance,	4.2	5.1	199.1	234.2
Services[d]	12.5	9.1	188.3	168.4
Government	-0.4	6.8	91.2	158.1
Agriculture	-2.6	-1.8	33.2	33.3

na Indicates not applicable.

[a] Includes private household workers, self-employed unpaid family workers, and mining.
[b] Includes self-employed and unpaid family workers and mining.
[c] Includes mining.
[d] Excludes private household workers.

Note: U.S. and Georgia values for government sector may not be entirely comparable, because of definitional differences in national and state data.

Source: U.S. Bureau of Labor Statistics, *Geographic Profile of Employment and Unemployment, 1988*; unpublished tabulations from the *Current Population Survey, 1988*. U.S. base percentages and all comparative values calculated by Selig Center for Economic Growth; U.S. data adjusted for comparability with state definitions. Percentages may not add to total because of rounding.

Table 3

Percentage Distribution of Employed Civilians in the U.S. and Georgia, by Sex and Occupation, 1988, with Differences by Sex (based on annual averages in thousands)

Industry	Total		Men		Women	
	U.S.	Georgia	U.S.	Georgia	U.S.	Georgia
Total Employed (number in thousands)	114,968	3,007	63,273	1,603	51,596	1,403
Total (percent)	100.0	100.0	100.0	100.0	100.0	100.0
Managerial and professional specialty	25.4	23.0	25.5	23.1	25.2	22.8
Executive, administrative, managerial	12.4	12.4	13.6	13.9	10.8	10.6
Professional specialty	13.0	10.6	11.9	9.2	14.4	12.2
Technical, sales, administrative support	30.9	31.2	19.7	20.7	44.6	43.0
Technicians and related support	3.1	3.0	2.9	3.1	3.3	2.9
Sales	12.0	12.4	11.1	11.6	13.0	13.2
Administrative support, including clerical	15.9	15.8	5.7	6.0	28.3	26.9
Service occupations	13.3	12.8	9.6	9.0	17.9	17.2
Precision production, craft, repair	11.9	12.5	19.7	21.0	2.3	2.8
Operators, fabricators, laborers	15.5	18.6	20.9	23.3	8.9	13.3
Machine operators, assemblers, inspectors	7.1	8.8	7.6	7.6	6.4	10.3
Transportation and material moving	4.2	4.7	6.9	8.0	0.8	1.0
Handlers, equipment cleaners, helpers, laborers	4.2	5.1	6.4	7.7	1.6	2.0
Farming, forestry, fishing	3.0	2.0	4.5	3.0	1.1	0.7

Industry	Women's Rate Compared to Men's		Women's Rate as % of Men's Rate	
	U.S.	Georgia	U.S.	Georgia
Total Employed (number in thousands)	na	na	na	na
Total (percent)	na	na	na	na
Managerial and professional specialty	-0.3	-0.3	98.8	98.7
Executive, administrative, managerial	-2.8	-3.3	79.4	76.3
Professional specialty	2.5	3.0	121.0	132.6
Technical, sales, administrative support	24.9	22.3	226.4	207.7
Technicians and related support	0.4	-0.2	113.8	93.5
Sales	1.9	1.6	117.1	113.8
Administrative support, including clerical	22.6	20.9	496.5	448.3
Service occupations	8.3	8.2	186.5	191.1
Precision production, craft, repair	-17.4	-18.2	11.7	13.3
Operators, fabricators, laborers	-12.0	-10.0	42.6	57.1
Machine operators, assemblers, inspectors	-1.2	2.7	84.2	135.5
Transportation and material moving	-6.1	-7.0	11.6	12.5
Handlers, equipment cleaners, helpers, laborers	-4.8	-5.7	25.0	26.0
Farming, forestry, fishing	-3.4	-2.3	24.4	23.3

Note: Percentages may not add to totals because of rounding.

Source: U.S. Bureau of Labor Statistics, *Geographic Profile of Employment and Unemployment, 1988*; (Bulletin 2327), Table 15, pp. 58-59; *Employment and Earnings*, Vol. 36, No. 1 (January, 1989), Table 21, p. 182. Percentages and differences computed by Selig Center for Economic Growth.

agriculture at a third of the men's rate, and in durable good manufacturing at 37 percent of the male rate. Their rate for all manufacturing was 75 percent of that for men. Women's rate of employment in the transportation, communications, and public utility sector was 42.6 percent of the men's rate. In other sectors, however, Georgia's women were employed at proportionately much higher rates. In nondurable manufacturing, their rate was almost 114 percent of that of men, and for wholesale and retail trade, 105 percent. The differences were even higher in three other sectors: finance, insurance, and real estate, where the women's rate was 234 percent of the males', 168 percent in services, and government, 158 percent. The state's pattern differs from the nation's more in degree than direction; exceptions are relative female employment rates in nondurable manufacturing (87 percent of the male rate for the U.S., versus almost 114 percent for Georgia) and in government (91.2 percent of the men's rate for U.S. females, versus 158 percent for Georgia's women).

EMPLOYMENT BY OCCUPATION

Data for employment by occupation also show substantial differences between the sexes on both the state and national levels (Table 3). In 1988, CPS studies showed that 43 percent of Georgia's employed women are concentrated in technical, sales, and administrative support jobs, with another 17.2 percent in service occupations and 13.3 percent working as operators, fabricators, or laborers. Some 22.8 percent reported broadly defined managerial and professional specialties, compared to 23.1 percent for the state's men. Only 9 percent of males worked in service occupations, but were much more likely to be employed in precision production, craft, and repair occupations, and as operators, fabricators, and laborers. Calculating women's rates as a percent of men's shows the same broad range: the female rate of employment in transportation and materials handling occupations, for example, was only 12.5 percent of the male rate in Georgia, but the women's rate in administrative support positions (including clerical), was almost 450 percent of that for men. As in employment by industry, the similarities between the U.S. and Georgia patterns are far greater than the differences.

Georgia's women, and those of the U.S. in general, most often are employed in relatively low paying industries and occupations. In addition, Georgia has more women than the U.S. average in certain other low paying jobs, such as household service workers and nondurable manufacturing factory operatives, particularly in apparel and textiles. Such larger proportions clearly signal that women's pay will not match that of males who as factory operatives are proportionately more frequently employed in higher paying durable goods manufacturing, including the production of automobiles and other transportation equipment.

As we have seen, in both the U.S. and Georgia over 40 percent of all employed civilian women work in technical, sales, and administrative support jobs, many of which are less well paid, while only about 20 percent of men are so employed. Pay rates in service occupations, another area with relatively high concentrations of women workers, vary greatly but average well below those of manufacturing jobs; some service jobs (such as food service occupations) pay at minimum-wage levels in many parts of the country. Even though women's rate of employment in professional specialties is above that for men in both the U.S. (14.4 percent versus 11.9 percent for males) and Georgia (12.2 percent, compared to 9.2 percent for men), the broad occupational category includes many female public school teachers, a relatively low-paid professional group. Far fewer men teach in public schools; instead, their professional employment in the higher-paid legal, engineering and medical specialties is proportionately much greater.

FACTORS AFFECTING PAY RATES

Pay rates broken down by industry, occupation, and sex are not available for Georgia, but CPS pay data for all workers in the state and nation point to the potential income effects of the relatively high concentrations of women in lower-paid industries and occupations. Data on pay rates also are important in the light of two other factors disproportionately affecting women: BLS studies have shown that more than twice as large a percentage of women work part-time, and that they more often are paid hourly rates, compared to men. Variation in amount of time worked, (for example, women working as school teachers for nine or ten months of the year or working on part-time jobs), is an important source of earnings differences among individuals and family heads, and therefore a strong influence on total incomes. Part-time work and hourly pay also reflect occupations; the BLS found that only about 20 to 25 percent of workers in professional specialties, or in executive, administrative and managerial positions, are paid on a straight hourly rate, and relatively few work just part-time.

Fortunately, broad national and state per-hour pay comparisons can be developed from the CPS Earnings files. In addition to the information available on a per-hour basis, a per-hour equivalent is calculated for persons paid on a salaried or daily (other non-hourly) rate basis, by dividing their reported weekly pay by their reported usual hours of work. Data thus calculated for selected occupations and industries in 1987 and 1988 combined show that pay for all Georgians, both males and females, falls below the national average by varying degrees in many areas, but exceeds it in several (see Table 4).

By industry, Georgia's hourly paid workers earned pay ranging from $4.89 per hour in retail trade to $13.12 per hour in the transportation, communications, and public utilities sector. Pay rates ranged from 80 percent of the U.S. average in construction to 124.5 percent of the national rate in transportation, communications, and public utilities. By occupation, pay levels for the state's hourly paid workers were highest for technicians and related support personnel ($11.36 hourly, or nearly 110 percent of the average U.S. rate for the group), lowest in amount ($5 per hour) for sales occupations, and lowest as a percentage of national rates for materials handlers, whose $7.21 hourly pay represented 81.7 percent of comparable U.S. pay.

Pay rates for hourly workers in education, hospitals, and

Table 4

Comparative Pay Rates for Selected Industries and Occupations, By Wage/Salary Status, U.S. and Georgia, 1987-1988 (rates in dollars)

Classification	Hourly Paid Workers by Industry			Salaried, Nonhourly Paid Workers by Industry		
	U.S.	Georgia	Georgia as % of U.S.	U.S.	Georgia	Georgia as % of U.S.
Construction	10.18	8.13	80.0	12.13	12.24	100.0
Manufacturing, durable goods	9.22	8.69	94.3	14.79	13.48	91.1
Manufacturing, nondurable goods	7.93	6.83	86.1	12.91	10.65	82.5
Transportation, communications, public utilities	10.54	13.12	124.5	11.76	12.16	103.4
Retail trade	5.25	4.89	93.1	9.93	9.17	92.4
Business Services	7.35	7.52	102.3	7.94	6.45	81.2
Hospitals	9.77	8.76	89.7	12.73	10.65	83.7
Education	6.72	5.62	83.6	12.01	10.87	95.3
Public Administration	10.01	9.93	99.2	13.12	10.96	83.5

Classification	Hourly Paid Workers by Occupation			Salaried, Nonhourly Paid Workers by Occupation		
	U.S.	Georgia	Georgia as % of U.S.	U.S.	Georgia	Georgia as % of U.S.
Executive, administrative, managerial	9.51	8.77	92.2	14.30	12.96	90.6
Professional specialty	11.72	11.24	95.9	13.81	12.98	94.0
Technicians and related support	10.34	11.36	109.9	13.68	13.00	95.0
Sales occupations	5.44	5.00	91.9	12.17	11.92	98.0
Administrative support, including clerical	7.44	7.14	96.0	9.83	9.27	94.3
Service*	5.13	5.09	99.2	12.20	10.38	90.9
Precision production, craft, repair	10.35	9.48	91.6	8.29	6.79	81.9
Machine operators, assemblers, inspectors	7.91	6.83	86.4	9.60	9.53	99.3
Materials handlers	8.83	7.21	81.7	7.18	7.80	101.0
Handlers, equipment cleaners, helpers, laborers	6.82	6.13	89.9	5.59	4.47	80.0

*Does not include household or protective services workers.
Source: U.S. Bureau of the Census, Current Population Survey, Annual Earnings File, 1987 and 1988.

nondurable goods manufacturing also stood at less than 90 percent of average U.S. levels. The relatively low hourly pay levels for the machine operatives, material handlers, and laborers groups (each less than 90 percent of the U.S. average) are important, given Georgia's large employment in nondurable manufacturing industries. Estimates for the service group, whose average hourly pay of $5.09 was barely above the rate for sales occupations, do not include household or protective services workers, traditionally considered among the lowest paying service employees.

Equivalent pay rates for Georgians working in the same industries and occupations, but paid on a salaried or nonhourly paid basis, generally are higher than those for hourly paid workers, but still tend to average between 81 and 95 percent of the U.S. levels by industry, and 80 to 95 percent by occupation. Rates in the construction and transportation, communications, and public utilities sectors, and for materials handlers, were the only hourly-pay equivalents for salaried or nonhourly paid workers above 100 percent of the U.S. levels. Within industries, nondurable manufacturing, business and repair services, hospitals, and public administration all show comparatively low ratios. Salaried or nonhourly paid precision production, craft, and repair workers showed the lowest (81.9 percent) ratio to U.S. levels among the occupations given. The industry and

occupational groupings with relatively low ratios of pay to U.S. averages quite often are jobs in which Georgia's women workers are more concentrated, especially in services and sales. Women also make up many of the household service workers for whom data are not reported here.

WOMEN'S PAY IN THE U.S. AND GEORGIA

Although women's overall relative pay level improved in the 1980s, it remains well below that for men. In 1980, the national ratio of per-hour women's pay to men's stood at about 64 percent; by 1987-88, it had risen to 75.6 percent, one percentage point above Georgia's ratio of 74.6 percent (Table 5). The relative rates for female salaried, nonhourly paid workers in the state and nation were slightly higher. The ratios vary substantially by age, however. They are highest for Georgia's female workers aged 20-24 among both hourly paid (89.5 percent of the men's pay) and salaried workers (95.7 percent of the men's pay), and lowest for women aged 25-64 among hourly paid workers (71.7 percent) and women aged 65 and over among salaried persons (53.1 percent of the pay rate for men of that age).

The number of workers, average pay rate, and percentage of the U.S. rate in 1987-88 are shown for Georgia's workers, by sex and pay classification, in Table 6. Two conclusions stand out: (1) many of Georgia's workers, as classified in broad *age* groups, showed average pay rates that were relatively high percentages of those found for their counterparts in the U.S. as a whole; but (2) the dollar rates found for women fell well below those for men in every age group. (For the U.S., women's rates also were uniformly lower than those of men.)

In general, all broad age groupings of Georgia's male workers, except salaried, nonhourly paid workers aged 16-19, had average pay rates above 90 percent of the national average; for hourly paid men aged 16-19, the rate in Georgia actually exceeded the U.S. average. Although relative pay rates for hourly paid women in Georgia were more than 90 percent of the U.S. women's values for all age groups except those aged 65 and over (82.3 percent), no group exceeded the U.S. average. Among salaried, nonhourly paid workers, women aged 20-24 had hourly equivalent pay slightly (100.4 percent) above the U.S. rate, but lower proportions of U.S. levels for other age groups than did men. The rates for Georgia's salaried, nonhourly paid women workers aged 16-19 were particularly low, averaging only 72.7 percent of the U.S. average for that age group. Similarly, the state's rate for women aged 65 and over in salaried, nonhourly paid employment was just over 80 percent of the national value.

Among the significant factors contributing to the continuation of low pay ratios for women, particularly the youngest, has been the increased labor force participation rate of females who did not finish high school. In both the U.S. and Georgia, the participation rate for this group rose from about 38 percent to more than 50 percent over the last two decades, although in Georgia such workers made up a slightly smaller proportion of the work force than in the U.S. as a whole. These workers tend to be employed part-time and in essentially unskilled jobs at relatively low pay.

Statistically, a smaller proportion of all Georgia's women are in the labor force. In general, this smaller, labor force-active group has an overall education level higher than that for men, but for the entire adult population (persons 18 and over but not in school), the education levels of both black and white women fall below those for males of the same race. Fortunately, recent studies of CPS data* show that among Georgia's females aged 18 to 24 , the proportion who are school dropouts has fallen to 13 percent. As an additional positive force, the share of Georgia's labor force represented by college graduates now roughly matches the national rate, and has doubled over the past two decades. The growth of a more educated work force may

**See Lawrence R. Hepburn and Rudolph A. White, "School Dropouts: A Two-Generation Problem," Carl Vinson Institute of Government, The University of Georgia, 1990.*

Table 5

Women's Pay as a Percent of Men's, by Age Group and Wage/Salary Status, U.S. and Georgia, 1987-1988

Women's Age Group	Hourly Paid Workers: Women's Pay as % of Men's in: U.S.	Hourly Paid Workers: Women's Pay as % of Men's in: Georgia	Salaried, Nonhourly Paid: Women's Pay as % of Men's in: U.S.	Salaried, Nonhourly Paid: Women's Pay as % of Men's in: Georgia
16-19	88.9	84.0	83.3	84.2
20-24	85.8	89.5	93.7	95.7
25-64	71.9	71.7	76.7	75.5
65 up	83.8	74.0	64.1	53.1
All	75.6	74.6	76.7	75.3

Source: Based on U.S. Bureau of the Census, Current Population Survey, Annual Earnings File, 1987-1988.

help to account for the higher pay ratios found for salaried workers, both men and women, aged 20-24.

Among both sexes, the state's older workers are likely to be both less well educated as a group, and to be employed part-time, particularly as they reach 65 and over. The age group of 25-64 is so broad that it is difficult to draw detailed conclusions about the forces affecting it, but trends toward more education and a wider range of economic opportunities in the state certainly have helped women as well as men.

EARNINGS AND INCOME

Given the distribution of employment by occupation and industry, variations in pay levels, and the influence of educational attainment, what can be said about women's money income relative to men's in Georgia and the nation? The relationship between educational attainment and income is clear. CPS data for 1987-88, given in Table 7, indicate that 31 percent of Georgia men who have completed fewer than nine years of school have annual money incomes of less than $5,000; 56.7 percent have incomes of less than $10,000. Of those completing one to three years of high school, 14.9 percent fall into the under $5,000 group, and 39 percent into the under $10,000 category. Only 9.2 percent of men completing four years of high school reported incomes of less than $5,000 and 25.6 percent, of less than $10,000. For those completing four years of college, the percentages with less than the two income levels fall to 6.2 percent and 11.2 percent, respectively. In each educational attainment group, the percentage of male Georgians at lower income levels exceeds that for the U.S. as a whole.

Table 6

Comparative Pay Relationships, Georgians and U.S. Workers, by Sex/Age Groupings and Wage/Salary Status, 1987-1988 (rates in dollars)

Age Group	U.S. Number	Rate	Georgia Number	Rate	% of U.S. Rate
			Men, Hourly Paid Workers		
16-19	3,371,261	4.49	76,457	4.68	104.3
20-24	5,081,265	6.38	138,345	5.97	93.6
25-64	22,287,233	10.07	1,114,021	9.50	94.4
65 up	595,187	7.01	29,901	6.50	93.2
All	31,334,946	8.85	1,358,724	8.36	94.5
			Men, Salaried, Non-hourly Paid Workers		
16-19	426,955	6.10	2,003	4.38	71.8
20-24	1,531,592	8.41	42,958	8.27	98.4
25-64	20,515,000	13.95	528,626	12.84	92.1
65 up	535,274	12.87	13,681	12.45	96.8
All	23,008,821	13.41	587,268	12.45	94.4
			Women, Hourly Paid Workers		
16-19	3,355,439	3.99	84,700	3.93	98.5
20-24	4,562,213	5.47	116,540	5.34	97.7
25-64	21,593,635	7.24	556,949	6.81	94.1
65 up	645,881	5.87	20,533	4.83	82.3
All	30,157,168	6.69	778,722	6.23	93.1
			Women, Salaried, Non-hourly Paid Workers		
16-19	309,726	5.08	3,723	3.69	72.7
20-24	1,629,820	7.88	50,041	7.91	100.4
25-64	15,427,195	10.69	442,577	9.69	90.7
65 up	381,442	8.25	14,302	6.61	80.2
All	17,748,183	10.28	510,643	9.39	91.3

Source: Based on U.S. Bureau of the Census, Current Population Survey, Annual Earnings File, 1987-1988; percentages computed by Selig Center for Economic Growth.

Table 7

Percentage of Adults Whose Annual Incomes Fell Below $5,000 and $10,000, By Sex and Educational Levels, Georgia and U.S., 1987-1988

Group	Below 9th Grade	High School 1-3 years	High School 4 years	College 1-3 years	College 4 years	College 5+ years
Men						
			Percentage with Incomes Below $5,000			
Georgia	31.1	14.9	9.2	9.7	6.2	0.9
U.S.	24.5	13.3	7.2	5.8	3.3	3.0
			Percentage with Incomes Below $10,000			
Georgia	56.7	39.1	25.6	22.8	11.2	3.0
U.S.	53.5	34.9	19.0	14.5	8.4	7.4
Women						
			Percentage with Incomes Below $5,000			
Georgia	69.1	42.6	28.7	27.4	15.4	4.4
U.S.	52.0	42.7	32.3	26.0	20.7	13.2
			Percentage with Incomes Below $10,000			
Georgia	89.4	69.4	49.0	47.4	26.0	16.5
U.S.	84.3	73.5	55.7	49.3	32.6	23.2

Source: Based on U.S. Bureau of the Census, Current Population Survey, Annual Demographic File, 1987-1988.

Table 8

Money Income and Earnings Measures for Selected Georgia Residents* Aged 15 and Over, by Race and Sex, 1987-1988

	Measure (dollars)			Earnings (dollars)	
Group	Mean Income	Median Income	Range of Income	Mean Earnings	Range of Earnings
Males					
Black	12,760	8,450	200 - 61,350	10,910	1 - 61,000
White	24,620	21,500	1 - 168,349	21,213	2,000 - 125,393
Females					
Black	7,899	6,290	8 - 37,507	6,328	1 - 35,000
White	12,061	7,930	1 - 102,511	9,039	1 - 99,999
Females as % of Males					
Black	61.9	74.4		58.0	
White	49.0	36.9		42.6	

*Includes only persons who reported some income.

Source: U.S. Bureau of the Census, Current Population Survey, Annual Demographic File, 1987 and 1988. Percentages computed by Selig Center for Economic Growth.

As a group, at both the state and national level, the proportion of women in each educational group who have money incomes below $5,000 or $10,000 is much higher than that for men. Almost 70 percent of Georgia women completing less than nine years of school as of 1987-88 have money incomes of less than $5,000, and almost 90 percent, less than $10,000. For those completing four years of high school the rates are still almost 29 percent with incomes below $5,000 and 49 percent with incomes below $10,000. Even among women completing four years of college, 15.4 percent earn money incomes below $5,000 and 26 percent, below $10,000. For each educational level, however, the proportion of U.S. women with low money incomes is well above the comparable value for men.

Mean, median, and range of income confirm the discrepancy between women's money income and that of men. Among Georgia residents aged 15 years old and over who reported some money income in 1987-88, mean (average) and median (midpoint) income, as well as the income range differed substantially by race and sex (see Table 8). Black males, for example, had a mean money income of $12,760, a little more than half that of their white male counterparts; their median income of $8,450 was about 40 percent of white males' median, and their top income of $61,350 was about 36 percent of that for white men. The mean, median, and range of black females also stood well below those for white females, but most importantly, both black and white women reported money incomes that were only a fraction of those for their male equivalents. Black females' mean income of $7,899 stood at 61.9 percent of black males; white females ($12,061), at 49 percent of white males. Black females' median income of $6,290 was 74.4 percent of that for black males, but the $7,930 median for white women was only 36.9 percent of that for white males. For both black and white females, top reported money income was about 61 percent of the highest value reported by males of the same race.

As one might expect, similar relationships hold for earnings, a major component of incomes. Mean earnings for black females ($6,328) were 58 percent of those for black males, which in turn were only 51 percent of those for white males. Although their mean earnings of $9,039 were substantially higher than those for black women, white females still earned only 42.6 percent of white males' mean earnings. The top earnings reported by race and sex fall into patterns similar to, but at a higher level, than those for money income, with black females' highest earnings at 57 percent of black males' and white females', at 80 percent of white males.

The summary measures show that in 1987-88, black women had the lowest reported mean and median earnings and money incomes in Georgia, and that their income and earnings ranges were the narrowest. Their effect on overall measures was higher than in some other geographic areas, however, since blacks make up a higher proportion of the state's population than in the nation as a whole, and black women make up more than 30 percent of the state's females, compared to black males' 27 percent share of the male population.

INCOME AND EARNINGS BY OCCUPATIONAL GROUPINGS

The ratios of women's income and earnings by occupational grouping to those for men reflect the factors already discussed: On the average, women are less well educated, paid less per hour (in large part because of their industry and occupational distributions), and are more likely to work a shorter year (as do many public school teachers) or part-time during the year. Although small sub-sample sizes make some data more indicative than definitive, in 1987-88 women's annual mean earnings (without regard to race) in Georgia ranged from 30.1 to 78.5 percent of those for their male counterparts in the same occupational categories (Table 9). The proportion was highest in the craft, repair, and precision production group, and lowest for sales occupations and the transportation and material moving group. In groups that include many higher paying jobs, such as executive, administrative, and managerial occupations and professional specialties, women's annual mean earnings averaged only about 56 percent of those for males in the same occupations.

When range of earnings is considered, only in the executive, administrative, and managerial category were the highest reported earnings the same for Georgia's men and women; in all other groups women's highest earnings were substantially less than those of men. Women working in transportation and material moving jobs reported top earnings that were only 16.8 percent of the highest value for men. Put another way, the difference in highest earnings was almost 500 percent in men's favor for that category, compared to 37 percent for craft, repair, and precision production occupations.

Data on median income by occupation and sex show a similar pattern. Women in the "other services" group, which excludes household and protective service workers, had the second-lowest median income ($8,178), but the highest proportion (about 91 percent) of the men's median. The highest median incomes for both sexes occurred in executive, administrative, and managerial occupations, but Georgia's men had a median income of $33,330 whereas the median for women was $20,213, only 59 percent of the men's level. Women in sales occupations, with a median income of $7,425, had the lowest proportion of a male median (38 percent). For both men and women, the lowest income median occurred in private household service occupations; for men, it fell in the farming, forestry, and fishing occupations.

MONEY INCOMES FOR MEN AND WOMEN BY GENDER

Given the data for mean earnings and median incomes by occupation and sex, it is not surprising that CPS data for 1987-88 yield percentage distributions of money incomes in the U.S. and Georgia reflecting a similar pattern by sex (Figure 1). In general, a greater proportion of women than men fell into each lower income range. Georgia's women were more likely than U.S. women as a whole to concentrate at the lowest level,

Table 9

Comparative Annual Earnings and Incomes for Georgia Adults, by Sex and Occupational Groupings, 1987 and 1988 (amounts in dollars)

Classification	Men's Earnings/Incomes: Mean Earnings	Men's Earnings/Incomes: Median Income	Men's Earnings/Incomes: Range of Earnings	Women's Earnings/Incomes: Mean Earnings	Women's Earnings/Incomes: Median Income	Women's Earnings/Incomes: Range of Earnings
Executive, administrative and managerial	35,720	33,330	-9,999 - 99,999	20,213	19,675	1,700 - 99,999
Professional specialties	34,791	31,900	1 - 125,393	19,535	17,925	120 - 52,000
Technicians	23,854	23,000	2,400 - 63,000	15,920	15,250	850 - 35,000
Sales occupations	27,056	19,375	400 - 99,999	8,148	7,425	-9,999 - 33,000
Administrative support and clerical	20,160	18,125	1 - 99,999	12,132	9,755	-2,000 - 49,867
Private households	NA	NA	NA	2,301	3,565	50 - 10,000
Protective services	18,144	16,825	400 - 42,250	8,457	8,715	1,400 - 13,500
Other services*	9,885	8,178	1 - 58,000	7,000	7,460	1 - 27,000
Farming, fishing, forestry	5,688	6,820	-9,999 - 30,000	3,709	5,166	-8,699 - 12,650
Craft, repair and precision production	20,725	18,200	1 - 66,000	16,269	10,250	50 - 48,148
Marine operators, assemblers	16,646	14,100	87 - 47,000	10,349	9,255	145 - 30,000
Transportation, material moving	19,685	16,315	-9,999 - 83,500	8,868	8,946	500 - 14,000
Handlers, helpers, laborers	10,853	8,270	120 - 34,897	6,346	7,155	350 - 20,000
Armed forces (formerly) **	19,913	18,750	12,000 - 35,000	NA	NA	NA

Classification	Relationship of Values by Sex: Women's Mean Earnings as % of Men's	Women's Median Income as % of Men's	Women's Highest Earnings as % of Men's
Executive, administrative and managerial	56.6	59.0	100.0
Professional specialties	56.1	56.2	41.5
Technicians	66.7	66.3	55.6
Sales occupations	30.1	38.3	33.0
Administrative support and clerical	60.2	53.8	49.9
Private households	NA	NA	NA
Protective services	46.6	51.8	32.0
Other services*	70.8	91.2	46.6
Farming, fishing, forestry	65.2	75.7	42.2
Craft, repair and precision production	78.5	56.3	73.0
Marine operators, assemblers	62.2	65.6	63.8
Transportation, material moving	45.0	54.8	16.8
Handlers, helpers, laborers	58.5	86.5	57.3
Armed forces (formerly) **	NA	NA	NA

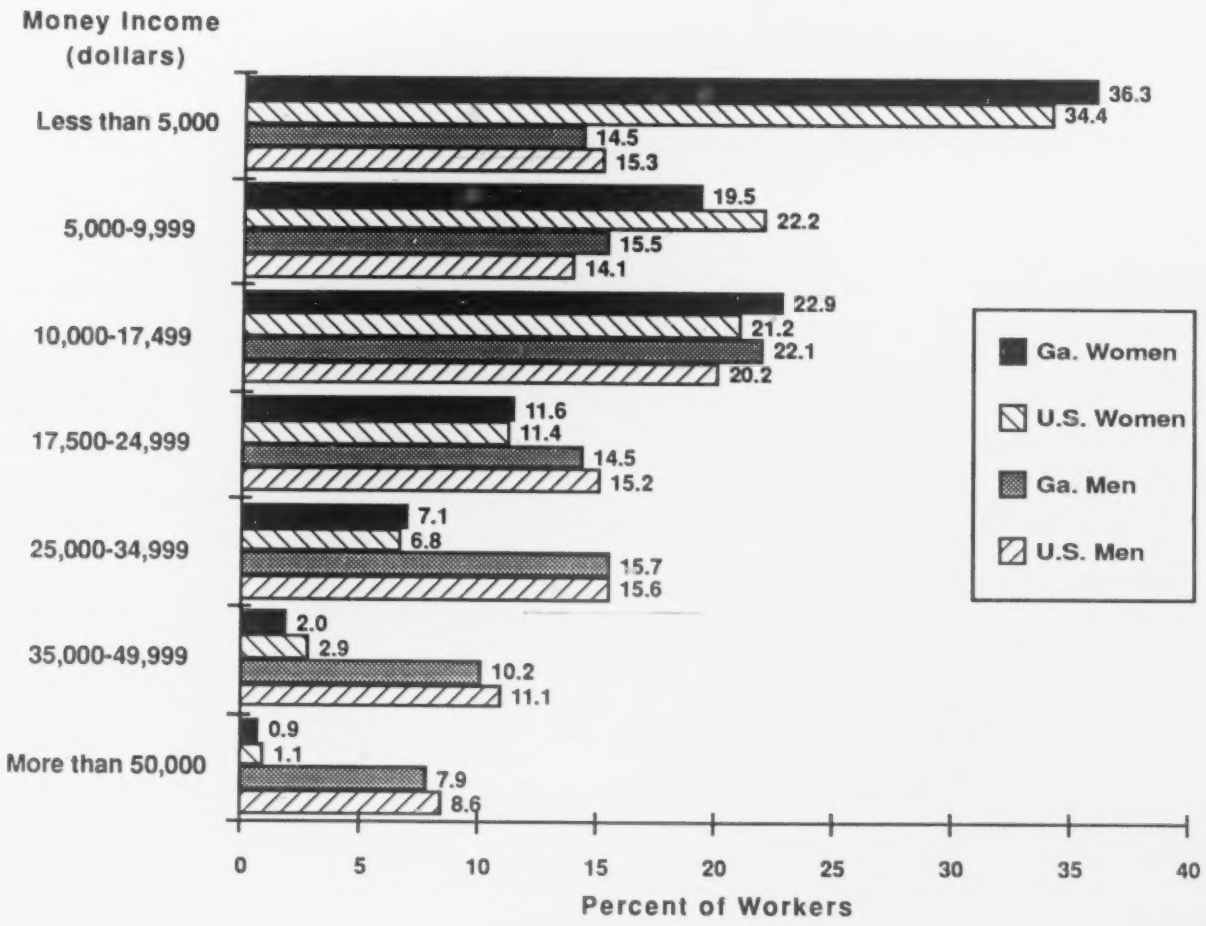
NA Not available.
* Does not include household or protective service workers.
**Includes persons discharged from the armed forces and in the civilian labor force at the time of survey, but reporting income from previous armed forces employment.

Note: Sample sizes for several occupational groupings are small, but data are included to illustrate the direction and range of earnings by sex.

Source: U.S. Bureau of the Census, Current Population Survey, Annual Demographic File, 1987 and 1988. Percentages computed by Selig Center for Economic Growth.

FIGURE 1

DISTRIBUTION OF MONEY INCOME, U.S. AND GEORGIA, BY SEX OF WORKER, 1987-88



Source: Based on U.S. Census, CPS, Annual Demographic File, 1987-1988.

although they had slightly higher percentages in the middle income groups. In both the U.S. and Georgia, over one third of women had money incomes of less than $5,000 annually, compared to roughly 15 percent for men. At the other end of the range, about 1 percent of women reported money incomes of more than $50,000, compared to about 8 percent of men. About eight times as many U.S. males as females report money income of $75,000 and up; in Georgia, nearly 50,000 men, but only 8,000 women, report this level. The top 20 percent of incomes begins at $33,480 for men but at $21,900 for women.

Money income patterns should be interpreted with the recognition that the relationship of summary measures such as medians and means can be affected by the extremes of the distribution. A few relatively high-income recipients can pull the mean above the median of the income distribution. For example, for the U.S. as a whole, mean income for all adults stands nearly 40 percent above median income for that group. It also should be noted that wages and salaries are a source of money income for less than two thirds of all U.S. adults; nearly as large a percentage report interest as an income source. Income from self-employment, unemployment compensation, pensions and military retirement, and alimony each is reported by less than 10 percent of adults, and fewer than 20 percent report social security income. Money income, additionally, is only a part of total income for some persons; other compensation such as housing, food, clothing, and medical care is not included in money income totals.

Family income usually stands above the levels reported for individual persons, thanks to multiple earners and other sources of income for family members, but employment earnings remain critical. In Georgia, nearly 60 percent of adults who are working report total family incomes exceeding $17,500. In

contrast, only 30 percent of unemployed adults reported family incomes above $17,500, and only a quarter of retired adults had family income above that amount.

IMPACTS OF INCOME AND EARNINGS DIFFERENCES

The implications of the relatively low pay levels, earnings, and money incomes reported by Georgia's women are substantial. Although Georgia's adult women number over 20 percent more than its men, their labor force participation is 10 percent lower. The extent to which low pay and restricted occupational opportunities influence the participation rate is unclear, but understanding their interaction will remain important to investigators and policymakers alike. A cycle of events and consequences has been suggested: Low earnings contribute to low income levels; in turn, low income levels contribute to high rates of poverty, particularly among minorities and single parents of any race. Poverty then contributes to high dropout rates, hence lower educational attainment, hence reduced earnings capacity, hence more poverty.

The pattern is not an academic matter for the state and nation. Although total employment, incomes, and earnings have risen dramatically in Georgia during the 1980s, some groups clearly remain less well off than general trends would indicate. Like others nationwide, Georgia's low-wage earners of either sex often fall into official poverty status; women are disproportionately more likely to fall into the very lowest income levels. Nationally, unmarried female heads of household experience a poverty rate more than twice that of male household heads. Almost one-fourth of single-earner families headed by women are poor; excepting only Washington, D.C., Georgia has the highest percentage of female heads of households of any state in the country. Collectively, American families in the bottom 20 percent of the income distribution receive only 4.6 percent of total personal income. Some studies have tied current high dropout rates among young people to pressures on teenagers to start work to bolster family incomes, or to support themselves independently.

Studies such as the continuing CPS household survey provide useful checkpoints for monitoring the direction and extent of change in the state's labor force and its employment and income experience. They are among the few sources of specific detail on the labor force experience and income status of women in Georgia. The data show progress, but they also show that many of Georgia's women still have far to go to achieve occupational, pay, and income patterns characteristic of the state's male workers. The next few years may see rapid changes, however. Recent BLS studies have stressed that labor force growth through the 1990s largely will depend on women and foreign-born minority workers, instead of the U.S.-born, white males who have contributed a majority of workers in the past. To find workers, employers may have to consider applicants who once would not have qualified, but who can be trained to the levels demanded by industry. The anticipated demographic and economic changes will open many opportunities for women in Georgia, as well as nationwide.

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Motor Fuel Tax (continued from page 4)

Table 2

Georgia Revenue Collections by Source 1962-1988
Percent of Total Personal Income

Year	Total Motor Fuel	General Sales Taxes	Personal Income	Corporate Income	Other Revenues	Total State
1962	1.22	2.15	0.60	0.34	0.93	5.24
1963	1.18	2.16	0.62	0.45	0.89	5.31
1964	1.16	2.15	0.65	0.48	1.00	5.43
1965	1.12	2.18	0.67	0.50	1.01	5.49
1966	1.09	2.16	0.76	0.58	0.97	5.56
1967	1.07	2.11	0.88	0.59	0.95	5.61
1968	1.04	2.15	0.92	0.52	0.94	5.57
1969	0.99	2.15	0.97	0.53	0.91	5.55
1970	0.99	2.16	1.19	0.57	0.91	5.82
1971	0.97	2.12	1.08	0.50	0.90	5.56
1972	1.09	2.21	1.25	0.48	0.93	5.95
1973	1.03	2.18	1.30	0.54	0.88	5.94
1974	0.95	2.22	1.41	0.57	0.87	6.02
1975	0.88	2.17	1.44	0.47	0.77	5.73
1976	0.80	2.14	1.43	0.48	0.70	5.55
1977	0.76	2.14	1.55	0.55	0.70	5.70
1978	0.70	2.17	1.66	0.58	0.64	5.75
1979	0.72	2.02	1.78	0.57	0.65	5.74
1980	0.83	1.63	1.91	0.54	0.82	5.73
1981	0.75	1.59	2.00	0.50	0.78	5.62
1982	0.62	1.76	2.12	0.50	0.67	5.67
1983	0.57	1.75	2.19	0.41	0.62	5.54
1984	0.53	1.82	2.13	0.47	0.59	5.54
1985	0.51	1.89	2.28	0.57	0.56	5.80
1986	0.47	1.86	2.36	0.52	0.54	5.75
1987	0.43	1.84	2.40	0.52	0.50	5.68
1988	0.42	1.81	2.47	0.51	0.50	5.71
1989	0.41	1.84	2.62	0.52	0.43	5.83

Source: Georgia Department of Revenue and U.S. Department of Commerce.

Table 3

Georgia Motor Fuel Tax Cost Per Mile
1972-1989

Fiscal Year	(A) Unleaded Gasoline Cost Per Gallon	(B) Georgia Gas Tax Per Gallon	(C) Average New Car Miles Per Gallon	(D) Georgia Fuel Tax Cost Per Mile (cents)	(E) Consumer Price Index (1982-84=100)	(F) "Real" Fuel Tax Cost Per Mile (cents)
1972	36.1	8.2	13.6	0.61	42.5	1.43
1973	38.8	8.3	13.3	0.63	46.2	1.35
1974	52.4	8.7	12.8	0.68	51.9	1.31
1975	57.1	8.9	15.1	0.59	55.5	1.06
1976	61.4	9.0	16.5	0.55	58.2	0.94
1977	65.6	9.1	17.7	0.52	62.1	0.83
1978	67.0	9.2	18.7	0.49	67.7	0.72
1979	90.3	9.9	19.3	0.51	76.7	0.67
1980	124.5	10.9	22.6	0.48	86.3	0.56
1981	137.8	11.3	24.2	0.47	94.0	0.50
1982	129.6	10.9	25.0	0.44	97.6	0.45
1983	124.0	10.7	24.6	0.44	101.3	0.43
1984	121.0	10.6	25.6	0.42	105.3	0.39
1985	114.0	10.4	26.1	0.40	109.3	0.37
1986	79.9	9.4	26.5	0.35	110.5	0.32
1987	96.1	9.9	26.7	0.37	115.4	0.32
1988	95.5	9.9	26.8	0.37	118.3	0.31
1989	99.0	10.0	27.0	0.37	124.0	0.30

Source: U.S. Department of Transportation; U.S. Department of Labor.

FIGURE 2

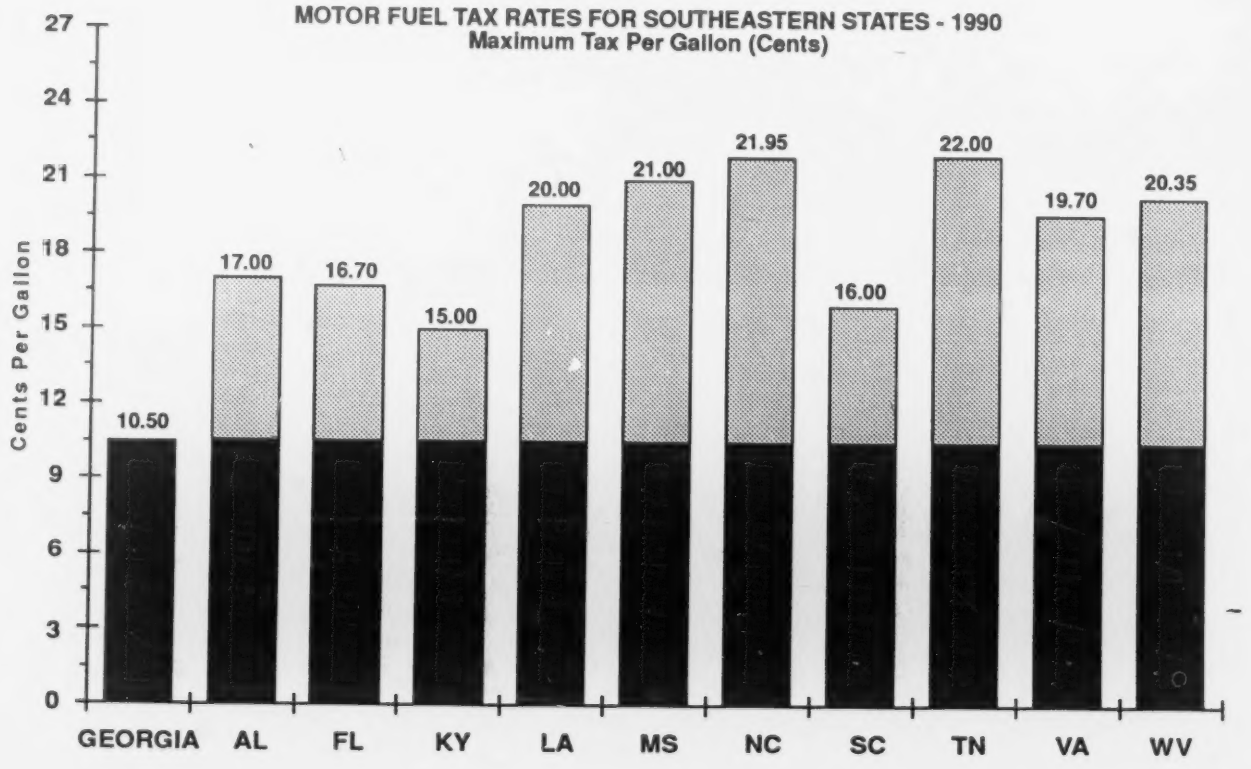

Table 4

Georgia Motor Fuel Tax Revenues 1962-1989
Related to Vehicle Miles of Travel
and Highway Construction Costs

Fiscal Year	(A) Motor Fuel Revenues	(B) Vehicle Miles Traveled (millions)	(C) Cents Tax Per 1000 VMT (A/B)	(D) FHWA Hy. Cost Index (1977=100)	"Real" $s Motor Fuel Revenues (millions) (A/D)	"Real" Revenue Per 1000 VMT (C/D)
1962	89.5	17,886.0	0.50	38.8	230.7	1.29
1963	94.0	18,809.0	0.50	40.0	235.0	1.25
1964	99.8	19,387.0	0.51	40.8	244.6	1.26
1965	106.9	20,104.0	0.53	41.7	256.4	1.28
1966	114.5	23,008.0	0.50	44.7	256.2	1.11
1967	122.4	24,221.0	0.51	47.6	257.1	1.06
1968	131.0	26,051.0	0.50	50.8	257.9	0.99
1969	141.8	28,310.0	0.50	54.3	261.1	0.92
1970	154.5	29,530.0	0.52	58.0	266.4	0.90
1971	165.5	31,449.0	0.53	60.8	272.2	0.87
1972	209.0	33,324.0	0.63	64.2	325.5	0.98
1973	226.2	35,360.0	0.64	70.8	319.5	0.90
1974	230.0	35,097.0	0.66	96.3	238.8	0.68
1975	227.0	39,272.0	0.58	96.7	234.7	0.60
1976	233.0	41,161.0	0.57	93.4	249.5	0.61
1977	243.7	42,646.0	0.57	100.0	243.7	0.57
1978	256.0	44,307.0	0.58	119.4	214.4	0.48
1979	295.0	43,680.0	0.68	142.6	206.9	0.47
1980	381.5	43,157.0	0.88	163.0	234.0	0.54
1981	387.1	44,843.0	0.86	156.7	247.0	0.55
1982	348.0	48,716.0	0.71	146.8	237.1	0.49
1983	350.5	48,908.0	0.72	146.5	239.2	0.49
1984	368.3	50,541.0	0.73	155.0	237.6	0.47
1985	381.0	53,713.0	0.71	172.1	221.4	0.41
1986	390.0	56,833.0	0.69	171.6	227.3	0.40
1987	382.8	60,293.0	0.63	172.0	222.6	0.37
1988	409.9	62,262.0	0.66	184.7	221.9	0.36
1989	424.2	64,862.0	0.65	187.0	226.8	0.35

Source: U.S. Department of Revenue; Federal Highway Administration.

	Tax Per Gallon	Added Tax	Local Option (%)	Maximim Tax per Gallon	Other Revenue[a]	Last Increase (Year)
Alabama	13		4	17	G,P	84
Alaska	8				G,P,U	61
Arizona	18		.5	18.5	G,U,W	90
Arkansas	13.7			13.7	G,P,W,U	89
California	14	6.25	1	20.25	W,U	90
Colorado	20	3		25	G,U,W	89
Connecticut	22	3		25	G,T	90
Delaware	16			16	W	87
D.C.	18			18		89
Florida	9.7		7	16.7	T,G,U	83
Georgia	7.5	3		10.5	G	71
Hawaii	11	4	6.5	21.5	G,U,W	85
Idaho	18			18	G,U,W	89
Illinois	19	6	1	26	P,T,U	89
Indiana	15	5		20	C,U	89
Iowa	20			20	U,P	89
Kansas	15			15	P,G,U	89
Kentucky	15			15	S,U	86
Louisiana	20			20	U	90
Maine	17			17	W,U	89
Maryland	18.5			18.5	W,U	87
Massachusetts	21			21	U	90
Michigan	15	4		19	G,U	85
Minnesota	20			20	G,U	89
Mississippi	18		3	21	G,U	89
Missouri	11			11	U	87
Montana	20			20	W,G,U	87
Nebraska	22.8			22.8	G,U	89
Nevada	18		4	22	G,U	88
New Hampshire	16			16	U	90
New Jersey	10.5			10.5	T,G	88
New Mexico	16.2		2	18.2	W,G	89
New York	8	6.75	8	22.75	G,P,U,T	85
North Carolina	21.95			21.95	U	89
North Dakota	17			17	G,U	87
Ohio	19			19	U,T	90
Oklahoma	16			16	G,U	87
Oregon	18		4	22	U,W	90
Pennsylvania	12	6		18	U	84
Rhode Island	20			20		89
South Carolina	16			16	G,U	89
South Dakota	18		1	19	U	89
Tennessee	21		1	22	P,U	89
Texas	15			15	G,U,P	86
Utah	19			19	U,P	87
Vermont	17			17	G,U	90
Virginia	17.7		2	19.7	U	89
Washington	22			22	U	90
West Virginia	20.35			20.35	G,U	89
Wisconsin	21.5			21.5	U	86
Wyoming	9			9	P,U	89

[a] Other Revenue coded as follows:
G = general funds
P = petroleum products, severance
W = weight distance tax on trucks
U = user generated revenue, fines, fees
T = tolls

Source: Highway Users Federation.

GEORGIA BUSINESS STATISTICS

SERIES	AUG 1990	JULY 1990	JUNE 1990	AUG 1989
Georgia Leading Indicators Index[1] (1969=100)	174.50	175.32	174.48	180.58
Georgia Coincident Indicators Index[1] (1969=100)	630.39	631.18	633.83	608.19
Nonagricultural Employment[2] (thousands)	3,009.2	3,005.1	3,021.6	2,957.3
Manufacturing Employment[2] (thousands)	561.4	559.9	565.0	568.4
Average Weekly Earnings, Manufacturing[2] (dollars)	378.94	377.80	377.98	364.27
Help Wanted Advertising, Atlanta Index[3] (1967=100)	166	196	185	218
Taxable Retail Sales[4] ($ millions)	3,933.7	3,774.1	4,174.0	3,851.0
Building Permits[5]				
Residential Housing Units, Private (thousands)	4.4	3.2	3.3	5.2
Value of Residential Housing ($ thousands)	278,411	213,517	217,447	323,446
Value of Nonresidential Construction ($ thousands)	178,239	161,381	225,176	336,625
Industrial Buildings	10,583	25,400	12,671	62,323
Office, Bank and Other Professional Buildings	23,155	14,952	58,348	140,356
Stores and Other Mercantile Buildings	49,326	39,284	44,087	33,736
Other	95,175	81,745	110,070	100,210
Consumer Price Index[6] (CPI-U, all items)				
South U.S. (1982-84 = 100)	128.7	127.8	127.3	122.1
South/Population more than 1,200,000	129.0	128.6	127.8	122.8
South/Population 450,000 - 1,200,000	129.8	128.6	128.2	123.4
South/Population 50,000 - 450,000	127.6	126.0	125.3	121.0
South/Population Less than 50,000	128.5	128.0	128.2	120.0
Atlanta (1982-84=100)[a]	–	130.8[b]	–	124.9[b]
Prices Received by Farmers, Georgia Index[7] (1977=100)	139[r]	138[r]	137[r]	143[r]
	1990:II	**1990:I**	**1989:IV**	**1989:II**
Total Personal Income[8] ($ millions)	109,102	107,737	104,799	103,008

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[1] Georgia Economic Forecasting Project, Selig Center for Economic Growth, College of Business Administration, University of Georgia. Initial monthly values subject to revision.

[2] Labor Information Systems, Georgia Department of Labor.

[3] Series published by The Conference Board, Inc.

[4] Derived by the Selig Center for Economic Growth, College of Business Administration, University of Georgia, from data of the Sales and Use Tax System, Georgia Department of Revenue.

[5] U.S. Department of Commerce, Bureau of the Census.

[6] U.S. Department of Labor, Bureau of Labor Statistics, Southeastern Regional Office.

[7] Georgia Department of Agriculture, Georgia Agricultural Statistics Service.

[8] U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System.

[a] Atlanta index is average of each 6 months of the calendar year; base revised to 1982-84=100 as of January 1, 1988.

[b] Data are for 1st half, 1990, and 1st half, 1989, respectively.

[r] Revised

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GEORGIA BUSINESS AND ECONOMIC CONDITIONS

SELIG CENTER FOR ECONOMIC GROWTH
THE UNIVERSITY OF GEORGIA

Volume 51, Number 1 January-February 1991

THE ECONOMIC IMPACT OF THE PROPOSED NORTHEAST GEORGIA AIRPORT

Jeffrey M. Humphreys

This article identifies and discusses the economic impacts on Georgia that will come from a proposed origin-destination airport, sited northeast of Atlanta, that will serve the needs of the Atlanta metropolitan statistical area and North Georgia. The net economic benefits accruing to the state during the year 2000, which is assumed to be the airport's first full year of operation, are assessed in terms of output, earnings, and employment. These estimates should assist effective planning at the state and local level, inform the public, and may aid in building community support for the facility.

Because this study estimates the impact of a proposed rather than an existing airport, many assumptions were required to estimate expenditure levels. The major assumptions include: (1) The proposed airport serves the aviation needs of the Atlanta MSA and is sited in northeast Georgia. (2) The proposed airport serves primarily as a origin-destination airport with limited connecting activity. (3) The proposed airport serves only that portion of aviation demand that cannot be accommodated at Hartsfield Atlanta International Airport. (4) On-site and off-site expenditure estimates are based largely upon impact studies and surveys of existing airports. (5) Detailed allocations of on-site expenditures to industry aggregations are based upon the national composition of inputs to that expenditure class. (6) All expenditure estimates reflect projected activity levels for the year 2000. Unless otherwise indicated, all dollar amounts are expressed in 1990 dollars.

THE NEED FOR AIR CAPACITY

The impact study does not independently project aviation demand for the proposed airport, but relies upon projections contained in the Atlanta Regional Commission's (ARC) report entitled: *Working Paper-3: Projections of Aviation Demand and Facility Requirements, Atlanta Region Airport System Plan Update: Air Carrier Component/Phase II*. The ARC report indicates that regional aviation demand in the year 2000 will equal 966,120 operations or 33,620,110 enplanements. The working paper defines unmet regional demand for air travel as activity levels projected for the region that cannot be accommodated by existing facilities. The report assumes that a combination of technological improvements and the construction of a commuter runway will allow Hartsfield's regional operational capacity to reach 931,000 operations by 2000 and that actual activity at Hartsfield will equal 95 percent of its enhanced capacity (i.e., 884,450 operations). Operating at this level of capacity will ensure that delays at Hartsfield remain within acceptable FAA standards. Unmet regional demand in 2000 equals unconstrained regional demand (966,120 operations) minus effective capacity at Hartsfield (884,450 operations), or 81,670 operations. Demand at the proposed airport of 81,670 operations is roughly equivalent to 3,642,515 enplanements. All economic impact estimates are based upon this aviation demand forecast.

Alternatives

This study assumes that Georgia wishes to meet regional aviation demand and does so both by constructing a second airport and by enhancing capacity at Hartsfield. Other options exist, however. In general, the two major alternatives to building a second airport are: (1) meeting only that portion of aviation demand that represents regional origination and destination traffic (doing nothing); and (2) relying solely on expansions at Hartsfield and other existing airports.

The simplest is to "do nothing" and to maintain capacity to serve only regional origination and destination passengers. Although there is enough capacity to last for some time, this will force a gradual reduction in connecting flights as delays prompt air carriers to relocate regional hubbing activity to airports in adjacent states. If connecting traffic is not accommodated, the implications for economic growth and quality of service will be adverse and substantial. Connecting activity brings out-of-state dollars into the state and creates new jobs. Cutbacks in this activity at Hartsfield would reduce the frequency of flights to cities served nonstop and could completely eliminate nonstop service to others.

The number of cities served nonstop and the frequency of flights are key considerations in the siting of both conventions and corporate headquarters. The prospects for continued growth of regional convention activity and for attracting and retaining corporate headquarters are significantly reduced under a "do nothing" option. The economic cost and inconveniences created by failing to serve as a regional connecting point are unacceptably high and preclude serious consideration of this alternative.

The other option accommodates regional demand by relying upon expansion and enhancement of capacity at Hartsfield and other existing airports. Although some improvements at Hartsfield are feasible, these will not provide enough capacity to meet regional demand fully. The demand estimate for the proposed airport already assumes that Hartsfield expands existing capacity from 720,000 operations (in 1987) to 931,000 operations (in 2000) through technological improvements and by building a commuter runway.

Although theoretically possible, using other existing airports to meet regional demand has practical shortcomings. Airspace restructuring would be necessary to accommodate increased traffic flows, resulting in significant adverse noise problems because a low altitude approach (for approximately 10 miles) would be needed to "tunnel under" Hartsfield's existing pattern. Furthermore, all of the existing airports would need substantial improvements in physical facilities to compensate for major increases in airline traffic. For example, the Fulton County airport could not support increased traffic without displacing existing corporate/business and general aviation operations. Additionally, in order to use Dobbins Air Force Base as an air carrier facility, the move must have Congressional approval. In light of these considerations, the only practical long-term means of fully accommodating regional aviation demand is the construction of a new facility.

DEFINING ECONOMIC IMPACT

In simple terms, economic impacts are made up of the *net* changes in regional output (sales), income, and employment that are due to new dollars flowing into the region from a given event of economic development. In the current context, the event is the proposed Northeast Georgia airport and the region is the state of Georgia. The economic impact numbers generated measure the net economic impact of the proposed airport by accounting for displacement of activity at Hartsfield, assuming that the proposed airport serves only unmet demand for regional aviation services. In actual practice, the new airport probably will be technically capable of serving more than just unmet demand, but to assume so in this context could produce an inflated impact estimate.

Economic impacts typically are created by new dollars flowing into the region from outside. As a practical matter, it is difficult to attribute expenditures associated with airports precisely to either in-state or out-of-state sources. For the air travel industry, even ticket purchases made in-state versus out-of-state are not adequate to determine the fraction of expenditures resulting from regional/nonregional originations. For this study, the allocation process is considerably less demanding because, without a second airport, congestion and delays at Hartsfield gradually will force airlines to reroute connecting activity to airports in other states. The alternative to building the second airport is to lose expenditures created by the provision of service to connecting passengers, the great bulk of whom are not Georgia residents.

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SELIG CENTER FOR ECONOMIC GROWTH

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The transfer of local origination activity to the second airport from Hartsfield allows the state to capture out-of-state connecting dollars, and this represents a true economic impact of the second airport.

For our purposes, only those expenditures that represent a true "value added" to the state economy are counted as economic impact; expenditures that immediately flow to recipients located outside Georgia are not. For example, that portion of jet fuel expenditures representing payments to producers and refiners outside the state is not a local economic impact; only the portion constituting payments to local wholesale and distribution firms is a "value added" impact to the Georgia economy. The impact estimates also are reduced indirectly to account for federal taxes.

Direct economic impacts are due to the provision of air service at the proposed airport; they typically, but not necessarily, occur on-site. The distinguishing feature of a direct impact is that it is an *immediate* consequence of airport economic activity. This article assesses six of these: airlines, air support, ground transportation, cargo/freight, government, and airport tenants. Expenditures and impacts of a direct nature are considered on-site expenditures and on-site impacts, respectively.

Indirect economic impacts are due to the use of the proposed airport and typically do not occur at the airport itself. Four categories are addressed, including visitors, travel agents, fuel, and crews. Expenditures and impacts of an indirect nature are considered off-site expenditures and off-site impacts, respectively.

Induced economic impacts are the multiplier effects of the direct and indirect impacts created by re-spending of the direct and indirect expenditures.

The total economic impact is the sum of the direct, indirect, and induced impacts. Total impacts also can be expressed for individual types of impact. For example, the total economic impact of airlines expenditures equals their direct plus induced impacts.

DIRECT ECONOMIC IMPACTS

Direct economic impacts typically are generated on-site by the provision of air services, and equal value-added expenditures to the region. (These terms are used interchangeably.) Economic impact studies of existing airports usually gather direct expenditure data through questionnaires and surveys of firms and government agencies on-site. In the case of a proposed airport, the survey population does not yet exist, so investigators must either rely on prior studies of existing airports or conduct new surveys at a roughly comparable facility. Because of cost and accessibility problems, estimates of direct expenditures at the proposed Northeast Georgia airport were based upon a prior study of an existing airport. Expenditures at the proposed airport were estimated for six types of on-site air service providers: (1) the airlines; (2) air support firms; (3) ground transportation firms; (4) cargo/freight firms; (5) government; and (6) airport tenant firms.

The first step in estimating the direct economic impacts likely to be generated was to comb existing airport impact studies for data. The best source of direct expenditure data was the 1988 *Economic Impact of Los Angeles International Airport* study commissioned by LA's Department of Airports, whose Office of Public and Community Relations gave the Selig Center permission to quote and use their data. An obvious drawback of using value-added expenditure data from the LAX study was that activity levels at LAX are considerably greater than those projected for the new Georgia airport. The second step in the estimation process was to adjust for this disparity. Projected enplanements at the proposed airport (for the year 2000) total only 17.6 percent of those at LAX; therefore, direct value-added expenditures at the Georgia airport were based on 17.6 percent of those expenditures at LAX. All direct expenditures and impact estimates are expressed in 1990 dollars.

For each of the six broad categories of on-site expenditures, the LAX study provided sufficient information to allocate expenditures to either payroll or operations, but did not provide the detailed information required to distribute operating expenditures to the 38 industrial aggregations for which the RIMS II model can estimate economic impacts. Allocating operating expenses to specific industries therefore was accomplished by using ratios derived from the national composition of inputs to each of the direct impact categories.

Airlines The direct economic impact of the airlines is estimated at $341.3 million. Payroll expenditures comprise $186 million, or 54.5 percent of the total. The

THE MULTIPLIER CONCEPT

Output, earnings, and employment multipliers tell us by how much we have to multiply a statewide increase in value-added expenditures to measure *fully* the total change in output, earnings, or employment in the state. Multipliers capture the impact of the initial round of spending plus the impacts generated by successive rounds of re-spending of those initial dollars in the state. The magnitude of a particular multiplier depends upon what proportion of the dollars spent leak out of the state during each round of spending. Obviously, multiplier effects within large self-sufficient areas are likely to exceed those in small or specialized areas that are less able to capture spending for the wide variety of goods and services that households and businesses require. Multiplier effects also vary greatly from industry to industry. In general, the greater the interaction with the local economy, the greater the multiplier for that industry.

The multiplier values used here were obtained from a customized version of the U.S. Department of Commerce's Regional Input-Output Modeling System (RIMS-II). Using the most recent data available, the Commerce Department provided the Selig Center with the multiplier values specific to Georgia.

remainder, $155.3 million, consists of various operating costs including landing fees, in-flight meals, advertising, ticket offices, and taxes. Specifically excluded are the costs of items or services that are either produced or provided outside Georgia.

Air Support Firms This category has a direct impact estimated at $62.9 million. Payroll expenditures make up $14.4 million, or 22.9 percent of the total. The remainder, $48.5 million, consists of various operating expenses. Air support firms provide a broad range of business and supporting services, including in-flight catering, cleaning, and fueling.

Ground Transportation Firms With a direct impact estimated at $42.6 million, payroll expenditures for ground transportation firms will equal $12.3 million, or 29 percent. The balance, $30.2 million, consists of operating expenses for these firms, which include taxis, rental cars, buses, shuttles, and limousines.

Cargo/Freight Firms This category's projected direct impact is $30.3 million, including payroll expenditures of $15.1 million, or 49.9 percent of the total. The remainder, $15.2 million, consists of the operating expenses. Businesses include firms located on-site that carry cargo by truck, air cargo companies, and other such companies. (Cargo expenditures of the scheduled airlines were included with airline expenditures and so are excluded here.)

Government Agencies The direct economic impact of government agencies is estimated at $24.3 million, including payroll expenditures of $17.5 million (72.2 percent of the total) and $6.7 million in operating expenses. The types of government agencies providing service at the airport include the U.S. Commerce Department, Bureau of Customs, Department of Agriculture, Federal Aviation Administration, Federal Bureau of Investigation, National Transportation Safety Board, U.S. Post Office, fire departments, and security services.

Airport Tenants Airport tenants' expenditures are estimated at $21.6 million. Payroll expenditures comprise $11.2 million, or 52 percent of the total. The remainder, $10.4 million, constitutes these firms' operating expenses for providing on-site goods and services to the traveling public. Most of these firms are retail concessions, eating and drinking places, or provide miscellaneous services such as parking, banking, and communications.

INDIRECT ECONOMIC IMPACTS

Indirect economic impacts are off-airport impacts that result from the use of airports. Value-added expenditures (indirect economic impacts) for the proposed Northeast Georgia airport were estimated for four broad impact categories: visitors; travel agents; fuel; and crews. Indirect impact estimates for travel agents' commissions, fuel, and crews' expenditures were based primarily on projected activity levels at the proposed airport and on data from the LAX study. Estimated visitor impacts were based on out-of-state passenger projections for the proposed airport and on impact studies of six existing airports: LAX, Dallas Love Field, John F. Kennedy, Newark, La Guardia, and Hartsfield. Used by permission, the LAX and the Dallas Love Field studies provided more detailed data regarding visitor expenditures and were the major data sources for estimating visitor spending at the proposed airport. The other studies provided key data regarding specific assumptions.

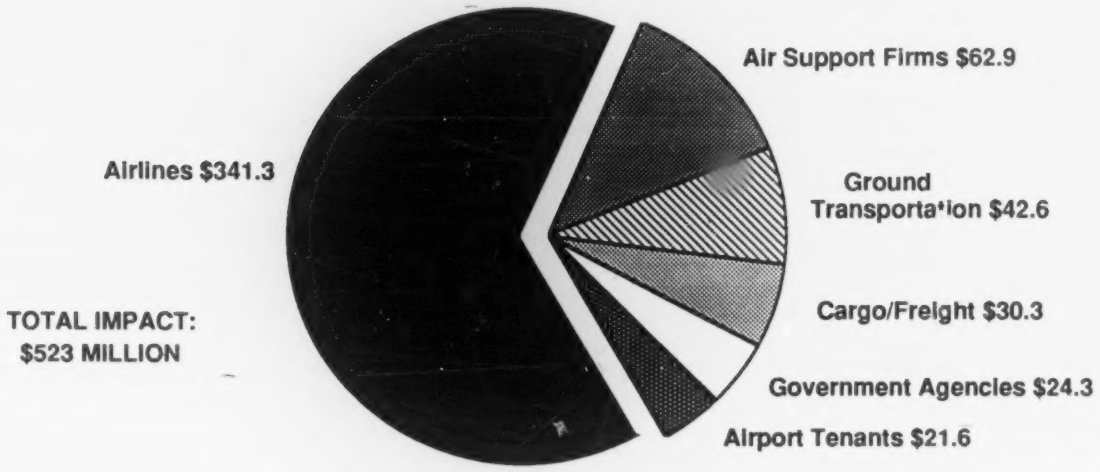
Visitors Spending by out-of-state passengers creates a large economic impact on the state. Visitors' spending refers to that portion of out-of-state passenger spending that occurs away from the airport. Several steps are needed to estimate this impact. The first involves calculating the expected number of visitors. Demand projections indicate that the second airport will process 3,642,515 enplaning passengers in 2000. It will serve mostly as an origin/destination airport, with Hartsfield remaining the region's primary hub. The Atlanta Regional Commission assumes that this implies that the proposed airport will not accommodate connecting flights, which is somewhat unlikely, given the competitive nature of the airline industry.

Since connecting passengers seldom leave the airport and therefore do not create indirect visitor impacts, an underestimate of connecting activity leads to overestimates of economic impacts. To lessen the potential for overestimating visitor impacts, this study assumes that 10 percent of enplaning passengers board connecting flights. It also assumes that this change does not significantly alter the ARC's projections of enplanements at the proposed airport. Connecting passengers were so designated, and the remaining passengers were classified as either visitors or residents. Taking 40 percent of enplanements at the proposed airport as a proxy, the expected number of visitors equals 1,457,006.

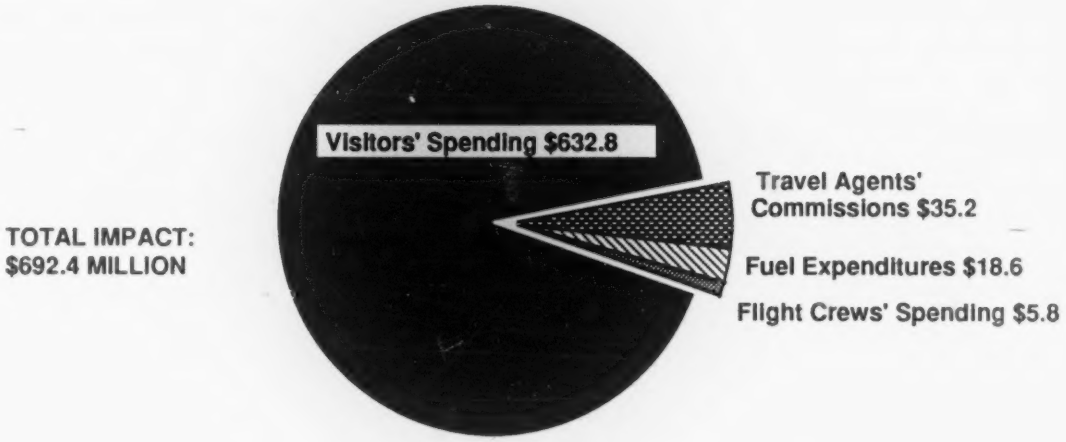
Obviously, there are two distinct categories of visitors: business/convention travelers and leisure travelers. Based on the average distributions of visitor types reported at LAX, Dallas Love Field, La Guardia, Newark, and Kennedy, 52.4 percent of visitors at the proposed airport are estimated to fall into the business/convention category, and 47.7 percent into the leisure group. Accordingly, estimates of these two groups enplaning at the proposed airport are 762,743 and 694,263, respectively. Data from the five airports further indicate that the average business/convention visitor's stay is 4.5 days and the average leisure visitor's stay is 6.5 days. Multiplying the number of visitors by the respective average lengths of stay yields 3,462,852 business visitor days and 4,505,769 leisure visitor days.

Detailed data on daily expenditures by business/convention and leisure travelers are available in both the LAX and the Dallas Love Field studies. Averaging the values reported in these two studies yielded estimates of daily visitor expenditures for the proposed airport. For the business/convention visitor, average daily expenditures total $121.17. The average daily expenditures for leisure visitors total only $68.12, largely because they spend less on lodging, food, transportation, and business services. Total visitor expenditures for each expenditure category

ESTIMATED DIRECT IMPACT OF THE PROPOSED AIRPORT
(millions of 1990 dollars)



ESTIMATED INDIRECT IMPACT



Source: Selig Center for Economic Growth, College of Business Administration, The University of Georgia

were obtained by multiplying average daily expenditures by the appropriate number of visitor days.

In addition, visitor retail expenditures must be adjusted further because the only portion of retail sales (as well as sales of food for off-premise consumption) that usually represents a value-added impact to the local economy is the part (margin) captured by local wholesale and retail establishments. The 47.2 percent margin for retail purchases and the 32 percent margin for off-premise food purchases were calculated from the input-output composition of commodity consumption of final demand in producers' and purchasers' prices. The last step was to allocate the value-added impact to the proper industry.

The total indirect economic impact of visitors' spending is $632.8 million. Business/convention visitors generate 62 percent of the total impact and leisure t ravelers generate the remaining 48 percent .

Travel Agents The second largest category of indirect economic impact is created by commissions earned by travel agents. The value-added impact from this source is $35.2 million, an estimate based on projected activity levels at the second airport and value-added impacts at LAX.

Fuel Operations at an airport the size of the proposed Northeast Georgia facility result in large expenditures for fuel. A portion of these expenditures already have been accounted for as direct expenditures. Of the remaining, most do not represent value added to the local economy. Because Georgia has neither significant petroleum production nor jet fuel refinery capability, only local distribution costs, profits, and taxes represent value added. Based on LAX figures and projected activity levels at the proposed airport, the estimated value-added indirect impact to the state totals $18.6 million.

Flight Crews Airline crews frequently will have layovers in Georgia, and are expected to spend layover allowances on lodging, food, local transportation, and miscellaneous retail purchases. Based on layover allowances reported in the LAX study and projected activity levels at the Georgia airport, crews' value-added expenditures in-state are estimated at $5.8 million, with $3.1 million for lodging, $1.5 million for meals on-premises, $876,000 for ground transportation, and $358,000 for retail purchases.

INDUCED AND TOTAL ECONOMIC IMPACT

The RIMS II model was used to calculate the total output impact of direct (on-site) and indirect (off-site) value-added expenditures. The induced output impacts

Table 1

ANNUAL OUTPUT IMPACT OF THE PROPOSED AIRPORT*
(Millions of 1990 Dollars)

Expenditure Source	Direct & Indirect Impact	Induced Impact	Total** Impact
DIRECT SPENDING	522.964	612.495	1,135.459
Airlines	341.343	406.307	747.650
Air Support	62.906	67.535	130.441
Ground Transportation	42.564	47.545	90.109
Cargo/Freight	30.276	35.645	65.921
Government	24.250	29.953	54.203
Airport Tenants	21.625	25.511	47.136
INDIRECT SPENDING	692.388	795.759	1,488.147
Visitors	632.820	732.399	1,365.219
Travel Agents	35.191	38.151	73.342
Fuel	18.561	18.353	36.914
Crew	5.816	6.855	12.671
TOTAL	1,215.352	1,408.252	2,623.604

* For the year 2000, expressed in millions of 1990 dollars.
** Total economic impact of spending by row category on all industrial sectors.

Source: The Selig Center for Economic Growth, College of Business Administration, The University of Georgia.

Table 2

OUTPUT IMPACT BY IMPACTED INDUSTRY
(Millions of 1990 Dollars)

Numerical Designation of Industry Aggregation	Industry Name	Direct & Indirect Impact	Induced Impact[a]	Total Economic Impact[a]
1	Ag, For & Fishery Services	0.357	32.693	33.050
2	For & Fishery Products	0.100	2.088	2.188
3	Coal Mining	0.689	0.001	0.690
4	Petroleum & Gas Mining	0.000	0.020	0.020
5	Other Mining	0.000	1.767	1.767
6	New Construction	0.000	0.000	0.000
7	M & R Construction	3.622	42.853	46.475
8	Food Products	4.157	118.177	122.334
9	Textile Products	0.104	21.296	21.400
10	Apparel	0.451	26.615	27.066
11	Paper Products	1.127	28.040	29.167
12	Printing & Publishing	3.407	28.326	31.733
13	Chem-Petroleum Refining	88.974	34.718	123.692
14	Rubber/Leather Products	2.147	15.277	17.424
15	Lumber/Furniture	0.014	13.168	13.182
16	Stone/Clay/Glass	0.459	7.490	7.949
17	Primary Metals	0.212	7.046	7.258
18	Fabricated Metals	2.597	11.943	14.540
19	Non-Electrical Machinery	3.521	6.863	10.384
20	Electric and Electronic	2.698	7.564	10.262
21	Motor Vehicles& Equipment	1.926	30.364	32.290
22	Other Transportation	12.110	6.648	18.758
23	Instruments	1.308	2.342	3.650
24	Other Manufacturing	0.660	4.812	5.472
25	Transportation	140.029	78.235	218.264
26	Communication	8.523	46.712	55.235
27	Utilities	4.356	58.835	63.191
28	Wholesale Trade	10.824	88.798	99.622
29	Retail Trade	75.963	117.459	193.422
30	Finance	3.407	36.509	39.916
31	Insurance	3.013	46.224	49.237
32	Real Estate	12.820	184.716	197.536
33	Lodging & Amusements	255.616	21.830	277.446
34	Personal Services	2.656	23.018	25.674
35	Business Services	167.393	85.425	252.818
36	Eating and Drinking	134.553	61.762	196.315
37	Health Services	0.410	55.982	56.392
38	Other Services	8.505	52.640	61.145
39	Households	256.644	.[b]	256.644[b]
	Total	1215.352	1408.256	2623.608

[a] Impact of spending by all industrial sectors (1-39) on specific row industry.

[b] The entries for the household sector (Row 39) report only the direct impact of payroll paid to employees of the airlines, airport tenants, cargo/freight, government, ground transportation, and air support. The induced impact of these direct payroll expenditures is included in the entries for industries 1-38 and totals $338.488 million. This value is not expressed in row 39 because to do so would amount to double counting.

Source: The Selig Center for Economic Growth, College of Business Administration, The University of Georgia.

were obtained by subtracting the direct or indirect impact for each industrial category from the total output impact of that category. The model also indicated which industries are affected and by what amounts.

The direct or indirect, induced, and total output impacts generated by each class of spending are summarized in Table 1. The combined impact of all direct and indirect expenditures on output is $2,623.6 million: $1,215.4 million represents the direct and indirect impacts and $1,408.3 million represents induced (re-spending) impacts. Direct spending and its associated induced spending account for 43 percent, or $1,135.5 million, of the total output impact, and indirect spending and its associated induced spending account for 57 percent ($1,488.1 million).

Table 2 provides a more detailed picture of the output impacts resulting from at- and off-airport spending. It shows the total of both direct and indirect expenditures received by each industry and goes a step further by allocating the induced impacts of spending by all sectors, including households, to the affected row industry.

TOTAL EARNINGS AND TOTAL EMPLOYMENT IMPACTS

The economic impact of the proposed airport is most easily understood in terms of total earnings and total employment. Total earnings include wages, salaries, proprietors' income, and other forms of labor income. Employment includes both full- and part-time jobs.

Note that earnings impacts already are included in the output impacts (although not separately stated) and should not be added in again. Employment impacts are simply another measure of economic impact and obviously should not be added to either the output or to earnings impacts.

Total Earnings Impact

The first column of Table 3 reports the total earnings impact, including induced effects, for each category of direct and indirect spending. Direct (at-airport) spending generates $516.5 million in earnings, representing about 51 percent of the total. Indirect (off-airport) spending generates $501.3 million in earnings to Georgia households.

Airlines' spending is the largest category of direct spending and accounts for $350.8 million in earnings. The earnings impact of expenditures by air support firms, the second largest category of direct spending, equals $50.7 million. Spending by ground transportation firms and cargo/freight firms generates $35.1 million and $30.0 million in earnings, respectively. Government spending generates $28.5 million, while airport tenants account for another $21.4 million in earnings.

Visitors' spending, including induced effects, generates $462.9 million in earnings to Georgia households. Travel agents' commissions account for $26.4 million in earnings. · Fuel and crews' expenditures create only modest earnings impacts of $8 million and $4 million, respectively.

Table 4 provides a detailed allocation of the earnings impacts produced by all direct and indirect spending sources. Earnings impacts are attributed to the industries affected rather than to expenditure sources.

Total Employment Impact

Employment impacts accruing to the state as a result of the proposed airport total 47,561 full- and part-time jobs. (The total employment impacts reported in Table 3 include induced employment impacts.) Direct spending, including induced effects, generates 20,012 jobs. Indirect spending, including induced effects, generates 27,549 jobs.

The largest direct employment impacts are created by airlines' expenditures. Including the effects of induced spending, the airlines provide 11,894 jobs. The total employment impacts of expenditures by other on-airport categories also create significant numbers of new jobs: air support (2,340), ground transportation (1,838), cargo/freight (1,029), government (1,254), and airport tenants (1,657).

The indirect employment impacts primarily are due to visitors' expenditures, which should add 26,066 jobs to the state's economy. Commissions earned by travel agents will add 950 jobs. The total employment impact of indirect spending for fuel is 293 jobs. Spending by air crews on layover will provide employment for 240 persons.

Table 4 shows the industry detail on where the jobs will be created. The transportation industry gains 8,304 jobs, more than any other sector. Lodging and amusements account for 7,336 of the new jobs. Three other sectors also account for large numbers of new jobs: eating and drinking places (6,634), business services (6,389), and retail trade (6,123). Four other sectors account for a thousand or more: other services (1,830), wholesale trade (1,171), personal services (1,156), and health services (1,086). Industrial sectors adding between 500 and 1,000 jobs include: maintenance and repair construction, real estate, households, insurance, food products manufacturers, chemical and petroleum refining, and apparel manufacturers.

COMPARISONS WITH OTHER U.S. AIRPORTS

Comparing the estimated impacts of the proposed airport to those reported for other U.S. airports allows a quick assessment of the validity of the Georgia data. Accordingly, the impacts attributed to the proposed Northeast Georgia airport were compared to data for LAX, Dallas Love Field, and Hartsfield. Due to disparities in the operating capacities of these airports, direct and indirect impacts are compared on a per enplanement basis. Because differences in local area multipliers distort comparisons of total economic impacts, the induced portions of impacts are not compared.

continued on page 16

A Preview of Growth

WAGE AND SALARY DISBURSEMENTS IN GEORGIA, 1980-89

Suzanne A. Lindsay

In December 1990, the U.S. Department of Commerce, Bureau of Economic Analysis, released new estimates of wage and salary disbursements and employment, plus average wage and salary disbursements per job, for Georgia, its MSAs, and counties. Although the estimates include 1969 through 1989, data for 1980-1989 offer a preview of growth during the decade just ended. At the national level, wage and salary disbursements provided 59.7 percent of total personal income in 1988; after additions and adjustments, the current data will be incorporated into the next round of total personal income estimates, due in April 1991.

The BEA defines wage and salary disbursements as "the monetary remuneration of employees, including the compensation of corporate officers; commissions, tips, and bonuses; and receipts in kind that represent income to the recipient... measured before deductions, such as social security contributions and union dues." The data show amounts paid during a given period, no matter when earned. The estimates are by place of work, and are derived largely from reports made under state unemployment insurance laws, with adjustments and additions to include disbursements not covered or incompletely reported.

Wage and salary payments are one of the building blocks for the BEA's personal income reports. To such disbursements, the BEA adds "other labor income" (almost all from employer contributions to private pension and welfare funds) and "proprietors' income" (from sole proprietorships, partnerships, and tax-exempt cooperatives) to derive *earnings by place of work*. Deducting personal contributions for social insurance and adjusting the result to convert place of work data to a place of residence basis yields *net earnings by place of residence*. Transfer payments and dividends, interest, and rent are then added to produce *total personal income* for the residents of a given area. The wage and salary data thus show how an important element of earnings by place of work has changed, but do not offer the fuller understanding provided by the full earnings and personal income information.

The provision of wage and salary employment (including both full- and part-time jobs) by place of work allows the calculation of average wages and salaries per job, which in turn permits the direct comparison of areas differing substantially in population and labor force size. In this analysis, both total and average wage and salary disbursements have been adjusted for inflation by the U.S. CPI-U (all city, all items average; 1982-84=100), to determine real annual average rates of growth for 1980-89.

STATE, METROPOLITAN, AND NONMETROPOLITAN GROWTH

Georgia's wage and salary disbursements totalled almost $65.4 billion in 1989, up 64 percent from 1980 in nominal (not inflation-adjusted) terms. The inflation-adjusted average annual rate of growth for the decade was 4.3 percent. Wage and salary employment grew by just over 800,000 jobs, at an annual average rate of 3.3 percent, to almost 3.2 million jobs. Because wage and salary payments grew faster than employment, their average per job increased from a nominal $12,497 in 1980 to $20,501 in 1989. Their real (inflation-adjusted) rate of growth for the decade was 1 percent.

By each measure, Georgia's 38 metropolitan counties grew faster than its 121 nonmetropolitan counties. Metropolitan wage and salary disbursements accounted for 77 percent of the state total in 1989 and increased in real terms at a 4.8 percent annual average rate, compared to a rate of 2.8 percent for disbursements in nonmetropolitan areas. Wage and salary employment in metropolitan areas made up 71 percent of the state's total in 1989, and grew by an annual average of 3.8 percent over the decade. Nonmetropolitan areas, with 29 percent of wage and salary employment at the end of the decade, posted an annual average rate of growth of 2.3 percent. Given these payment and employment base changes, metropolitan average wage and salary disbursements per job reached a nominal $22,235 in 1989 (108 percent of the state average), with a real annual average growth rate of 1 percent. Average disbursements per wage and salary job also grew in nonmetropolitan areas, to a nominal $16,249 per job in 1989 (79.3 percent of the state level), with a real annual average growth rate (0.5 percent) half that of metropolitan counties during 1980-89.

MSA WAGE AND SALARY CHANGES

The metropolitan increase in wage and salary disbursements and jobs during 1980-89 depended heavily on the Atlanta MSA's above-average growth. Only that 18-county MSA exceeded both statewide growth rates and the metropolitan area averages. With almost 58 percent of state disbursements and 75 percent of metropolitan disbursements in 1989, the Atlanta MSA also dominated wage and salary employment through its 49.9 percent of state, and 70.3 percent of metropolitan, wage and salary jobs, respectively. Atlanta's real wage and salary disbursements grew at an annual average rate of 5.6 percent over 1980-89; wage and salary jobs expanded by an annual average of 4.4 percent. The annual average rate of growth in inflation-adjusted average wage and salary payments per job was 1.3 percent.

In effect, the Atlanta area's prosperity lifted the state with it, although the Augusta (4.2 percent), Athens (3.8 percent), Savannah (3.3 percent) and Macon-Warner Robins (3 percent) MSAs showed annual average growth in real disbursements above the rate for Georgia's *nonmetropolitan* areas as a whole. The Columbus and Albany MSAs fell below the rate of nonmetropolitan disbursement growth, however, as did the Chattanooga MSA, which contains three of Georgia's metropolitan counties. The same pattern appeared in *annual average* rates of growth for wage and salary employment, although outside Atlanta, the simple percentage increase in such jobs between 1980 and 1989 still ranged from 12.6 percent for the Albany MSA to 31.4 percent for Athens.

Both the Atlanta ($23,734 and 115.8 percent of the state value) and Augusta ($20,540 and 100.2 percent) MSAs had average wages and salary disbursements per job above the state average. The Augusta MSA also turned in the highest annual average rate of growth (1.3 percent) in this measure, exceeding the rates for the state, metropolitan areas in general, and the Atlanta MSA. Only the Albany MSA showed a decrease in inflation-adjusted wages and salaries per job over the decade, although its absolute 1989 value stood at 91 percent of the state average. At 83.8 percent of Georgia's average wages and salary payments per job in 1989, Columbus' value ranked last among the MSAs but still showed a small positive (0.2 percent) annual average rate of growth for the ten years.

COUNTY LEADERS

As might be expected, the counties leading in nominal wage and salary payments amounts for 1989 were all metropolitan: Fulton, DeKalb, Cobb, Gwinnett, Chatham, Clayton, Richmond, Bibb, Muscogee, and Clarke, in that order. By annual average rate of growth for 1980-89, the ten top counties were mostly metropolitan: Gwinnett, Fayette, Effingham, Forsyth, Douglas, Cobb, Cherokee, Paulding, Camden, and Atkinson. Eight of the leaders are suburban areas within the Atlanta MSA; the top-ranked, Gwinnett, showed an annual average rate of growth of 14.9 percent in real wage and salary disbursements for the decade. Effingham County is a suburban county of the Savannah MSA; Camden County is the home of the Kings Bay submarine base, which has spurred rapid growth in the area. Atkinson County, in southeast Georgia, had substantial growth in manufacturing over the decade.

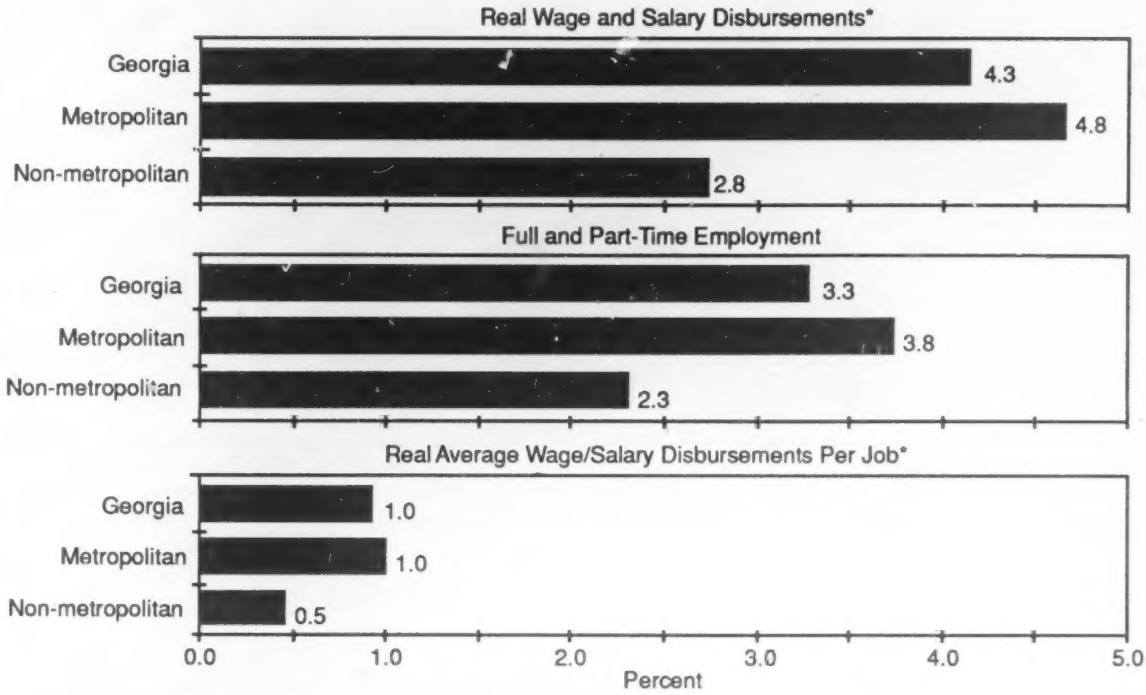
Taliaferro County, with nominal wage and salary disbursements of just over $10 million in 1989, had the smallest base value; the lowest annual average rate of growth — in this case a loss — in the inflation-adjusted value was in Turner County (-5.5 percent). After inflation adjustment, 40 counties grew at or above the statewide rate; four counties showed no growth; and twelve counties actually lost ground in wage and salary payments over 1980-89. The remainder showed positive changes, but at less than the state rate.

The ten counties with the most wage and salary jobs in 1989 were the same as those leading in disbursements, with a slight change in order: Richmond County moved ahead of Clayton County. By annual average rate of growth in wage and salary employment for the decade, Fayette County led with 14.2 percent, followed closely by Gwinnett County (13.4 percent) and Forsyth, Effingham, Douglas, Camden, Cobb, Cherokee, Paulding, and Oconee counties, in that order. All except Camden are suburban metropolitan areas (Oconee County is part of the Athens MSA). Wage and salary employment in 44 counties expanded at or above the state-wide annual average rate for the decade. Nineteen counties showed declines in wage and salary employment; the steepest was in Turner County, which lost 827 jobs (3.2 percent of its wage and salary employment) between 1980 and 1989. The remainder grew at rates below the state average.

The median value (half the counties had values above it and half below) for average wage and salary disbursements per job at the county level was $14,950 in 1989, about 73 percent of the state average. The ten counties exceeding the state average for wages and salary per job in 1989 were, in order: Fulton County ($25,919), Clayton, DeKalb, Cobb, Gwinnett, Twiggs, Wilkinson, Camden, Houston, and Bibb. The first five counties are contained in the Atlanta MSA. Bibb and Houston counties are part of the Macon-Warner Robins MSA; Twiggs and Wilkinson counties are located south and east of that MSA. Camden County reflects military-oriented coastal growth. Taliaferro County, with 1989 wage and salary disbursements per job of $10,046, ranked last in the state.

When the annual average rate of growth in real wages and salaries per job over the decade is computed, nonmetropolitan counties provided most of the leaders. Among the ten highest-growth counties — Effingham (with the top rate of 3.5 percent), Talbot, Forsyth, Dawson, Burke, Morgan, Appling, Pike, Bleckley, and Brantley— only Effingham and Forsyth are MSA counties. Several counties lie just outside an MSA and have shared in its growth; others, such as Burke County, where Plant Vogtle is located, have had unique sources of growth in the last decade. Other leaders have small employment bases, so

Annual Average Rates of Growth in Wage/Salary Measures and Employment, Georgia, Metropolitan and Non-Metro Areas, 1980-89
(by place of work)



*Adjusted by U.S. CPI-U, all cities, all items average (1982-84 = 100).
Source: Selig Center for Economic Growth, UGA, based on U.S. BEA data.

the addition of a small absolute number of jobs resulted in relatively high growth rates for the decade.

SUMMARY

The BEA's most recent estimates of wage and salary disbursements and employment, together with derived average wages and salaries per job, show varying patterns of growth in Georgia's economy. In general, wage and salary payments and employment were concentrated in metropolitan areas, with Atlanta continuing to lead the state. Among the smaller MSAs, Augusta and Athens ranked high in specific rates of growth for 1980-89 . Metropolitan counties dominated the top ten listings for absolute values, but some nonmetropolitan counties showed relatively high rates of growth in average wages and salaries per job. Because the data are partial and by place of work, they cannot be substituted for the BEA's annual earnings or personal income estimates, but they do indicate the general direction of wage and salary-related change during the past decade.

See county table on following pages

Wage and Salary Disbursements, Employment, and Average Wages/Salaries Per Job, for Georgia and Sub-state Areas, 1989, with Inflation-Adjusted Annual Average Growth Rates, 1980-89

(by place of work)

Area	Wage and Salary Disbursements: Amount, 1989 ($ thou.)	Wage and Salary Disbursements: Real AARG* 1980-89 (%)	Wage and Salary Employment**: Number 1989	Wage and Salary Employment**: AARG 1980-89 (%)	Average Wage and Salary Disbursements Per Job: Amount 1989 ($)	Average Wage and Salary Disbursements Per Job: Real AARG* 1980-89 (%)
Georgia	65,383,285	4.3	3,189,315	3.3	20,501	1.0
Albany, GA (MSA)	1,037,521	1.0	55,563	1.3	18,673	-0.3
Athens, GA (MSA)	1,308,244	3.8	73,343	3.1	17,837	0.7
Atlanta, GA (MSA)	37,774,918	5.6	1,591,594	4.4	23,734	1.1
Augusta, GA-SC (MSA)	4,041,354	4.2	196,755	2.9	20,540	1.3
Chattanooga, TN-GA (MSA)	4,139,733	1.7	210,456	1.6	19,670	0.1
Columbus, GA-AL (MSA)	2,153,726	1.8	125,352	1.6	17,181	0.2
Macon-Warner Robins, GA (MSA)	2,797,822	3.0	140,875	2.4	19,860	0.6
Savannah, GA (MSA)	2,413,010	3.3	122,772	2.9	19,654	0.4
Georgia (Metro portion)	50,372,406	4.8	2,265,492	3.8	22,235	1.0
Georgia (Non-metro portion)	15,010,879	2.8	923,823	2.3	16,249	0.5
Appling	122,544	4.9	6,183	2.8	19,820	2.0
Atkinson	23,689	8.2	1,779	6.5	13,316	1.7
Bacon	59,030	4.2	4,156	2.4	14,204	1.8
Baker	10,591	0.4	966	-0.7	10,964	1.1
Baldwin	326,304	2.6	19,096	2.2	17,088	0.4
Banks	33,086	2.1	2,707	3.2	12,222	-1.1
Barrow	161,927	3.4	9,727	2.2	16,647	1.2
Bartow	397,889	4.0	21,587	2.9	18,432	1.1
Ben Hill	116,115	2.4	7,242	2.3	16,034	0.1
Berrien	84,464	2.7	5,364	2.5	15,746	0.2
Bibb	1,686,771	3.7	84,267	2.4	20,017	1.2
Bleckley	55,718	5.1	3,965	3.1	14,052	1.9
Brantley	23,115	5.7	1,601	3.8	14,438	1.8
Brooks	49,310	3.1	3,964	2.4	12,439	0.6
Bryan	293,975	-0.3	17,726	1.2	16,584	-1.4
Bulloch	251,541	3.1	16,162	2.3	15,564	0.8
Burke	141,867	3.6	7,560	1.3	18,765	2.3
Butts	62,031	3.2	4,537	2.4	13,672	0.8
Calhoun	20,541	-0.2	1,816	-0.8	11,311	0.6
Camden	276,005	8.4	13,476	8.8	20,481	-0.4
Candler	33,254	2.3	2,627	2.2	12,659	0.1
Carroll	500,798	3.9	29,786	3.4	16,813	0.5
Catoosa	201,377	6.9	12,477	6.0	16,140	0.9
Charlton	27,992	0.9	2,036	1.1	13,749	-0.3
Chatham	2,334,544	3.1	118,194	2.7	19,752	0.4
Chattahoochee	479,976	0.0	27,816	0.9	17,255	-0.9
Chattooga	117,840	0.1	7,693	0.0	15,318	0.1
Cherokee	274,142	8.6	17,285	7.8	15,860	0.7
Clarke	1,069,359	3.5	57,179	2.8	18,702	0.7
Clay	7,607	-0.6	675	-1.0	11,270	0.5

(continued)

Area	Wage and Salary Disbursements: Amount, 1989 ($ thou.)	Wage and Salary Disbursements: Real AARG* 1980-89 (%)	Wage and Salary Employment**: Number 1989	Wage and Salary Employment**: AARG 1980-89 (%)	Average Wage and Salary Disbursements Per Job: Amount 1989 ($)	Average Wage and Salary Disbursements Per Job: Real AARG* 1980-89 (%)
Clayton	2,130,903	7.2	89,754	6.1	23,742	1.0
Clinch	33,485	-1.8	2,187	-1.8	15,311	0.0
Cobb	4,696,809	9.5	200,410	8.0	23,436	1.4
Coffee	191,903	4.7	13,057	3.7	14,697	1.0
Colquitt	206,374	1.9	14,256	1.6	14,476	0.3
Columbia	423,120	1.0	24,002	1.5	17,629	-0.5
Cook	62,818	2.2	4,626	1.7	13,579	0.4
Coweta	357,429	5.3	19,174	4.1	18,641	1.1
Crawford	14,885	1.4	1,264	1.1	11,776	0.4
Crisp	125,639	2.1	9,285	2.5	13,531	-0.4
Dade	37,615	1.6	2,703	2.8	13,916	-1.1
Dawson	23,516	6.9	1,573	4.5	14,950	2.3
Decatur	7,259,158	5.4	306,307	4.1	23,699	1.3
DeKalb	182,426	1.9	11,519	1.4	15,837	0.4
Dodge	66,773	1.1	5,015	0.3	13,315	0.8
Dooly	43,263	1.8	3,364	0.6	12,861	1.2
Dougherty	1,003,399	0.9	53,050	1.3	18,914	-0.4
Douglas	338,102	9.8	19,989	8.8	16,914	0.9
Early	105,553	1.4	5,723	0.5	18,444	0.8
Echols	3,771	1.8	304	0.6	12,405	1.1
Effingham	78,466	13.1	4,578	9.2	17,140	3.5
Elbert	112,620	0.0	7,696	0.5	14,634	-0.4
Emanuel	114,948	2.0	8,661	2.1	13,272	-0.1
Evans	50,029	3.8	3,837	2.5	13,039	1.2
Fannin	48,135	3.3	3,711	3.3	12,971	0.0
Fayette	335,425	14.4	19,835	14.2	16,911	0.2
Floyd	740,160	1.8	39,982	1.6	18,512	0.1
Forsyth	215,543	12.3	12,108	9.5	17,802	2.6
Franklin	81,397	4.0	5,865	3.4	13,878	0.6
Fulton	17,124,160	3.4	660,689	2.0	25,919	1.4
Gilmer	76,730	4.8	5,386	4.3	14,246	0.5
Glascock	9,942	3.4	687	1.8	14,472	1.6
Glynn	582,121	2.7	33,774	2.7	17,236	-0.1
Gordon	326,826	6.6	18,184	5.7	17,973	0.9
Grady	86,563	2.4	6,576	1.9	13,163	0.5
Greene	66,798	3.5	4,812	2.8	13,882	0.7
Gwinnett	3,304,174	14.9	144,480	13.4	22,869	1.3
Habersham	198,458	3.1	12,548	2.7	15,816	0.3
Hall	850,542	4.8	47,149	3.7	18,039	1.1
Hancock	23,786	2.1	1,952	2.0	12,185	0.1
Haralson	117,868	0.7	7,614	0.9	15,480	-0.1
Harris	52,015	4.3	4,089	3.8	12,721	0.5
Hart	137,672	4.8	8,416	4.0	16,358	0.7
Heard	34,024	2.4	1,936	2.2	17,574	0.2
Henry	272,927	6.7	14,301	6.3	19,084	0.4

(continued)

Area	Wage and Salary Disbursements: Amount, 1989 ($ thou.)	Wage and Salary Disbursements: Real AARG* 1980-89 (%)	Wage and Salary Employment**: Number 1989	Wage and Salary Employment**: AARG 1980-89 (%)	Average Wage and Salary Disbursements Per Job: Amount 1989 ($)	Average Wage and Salary Disbursements Per Job: Real AARG* 1980-89 (%)
Houston	925,579	1.8	45,631	2.3	20,284	-0.5
Irwin	29,937	1.6	2,462	0.3	12,160	1.4
Jackson	154,304	4.9	10,345	4.1	14,916	0.8
Jasper	37,164	-0.9	2,340	-1.0	15,882	0.1
Jeff Davis	99,487	0.7	6,171	2.1	16,122	-1.4
Jefferson	100,135	2.0	6,709	1.1	14,925	0.9
Jenkins	35,773	0.3	2,896	0.3	12,353	0.0
Johnson	28,741	0.2	2,713	1.2	10,594	-1.0
Jones	45,035	4.8	3,074	4.1	14,650	0.7
Lamar	55,624	0.5	4,174	1.0	13,326	-0.5
Lanier	16,096	3.9	1,353	3.6	11,897	0.3
Laurens	341,257	4.0	19,304	2.8	17,678	1.2
Lee	34,122	4.1	2,513	2.5	13,578	1.6
Liberty	174,214	2.4	11,137	3.5	15,643	-1.1
Lincoln	23,297	1.8	1,955	1.7	11,917	0.0
Long	6,179	-0.9	491	-0.4	12,585	-0.5
Lowndes	640,570	3.2	38,402	3.2	16,681	0.0
Lumpkin	62,758	5.9	3,963	4.7	15,836	1.1
Macon	85,086	-1.4	4,927	-1.3	17,269	-0.1
Madison	36,810	2.3	2,751	1.3	13,381	1.0
Marion	23,553	7.5	1,992	6.2	11,824	1.2
McDuffie	105,536	1.8	7,289	1.5	14,479	0.2
McIntosh	27,213	2.8	2,118	2.4	12,848	0.4
Meriwether	114,168	0.9	7,059	0.7	16,173	0.2
Miller	20,029	0.5	1,681	-0.8	11,915	1.3
Mitchell	97,035	1.5	7,788	1.7	12,460	-0.2
Monroe	98,632	-2.3	6,376	-0.7	15,469	-1.6
Montgomery	24,139	1.5	1,991	1.9	12,124	-0.4
Morgan	86,033	4.5	5,506	2.3	15,625	2.1
Murray	174,343	5.3	9,692	4.5	17,988	0.7
Muscogee	1,457,912	2.4	83,638	1.8	17,431	0.6
Newton	248,587	5.6	14,105	4.6	17,624	1.0
Oconee	47,771	7.7	3,068	6.8	15,571	0.8
Oglethorpe	21,063	4.9	1,779	3.2	11,840	1.6
Paulding	94,455	8.4	6,222	7.0	15,181	1.3
Peach	140,437	2.9	7,903	1.7	17,770	1.2
Pickens	70,071	2.4	4,421	1.3	15,850	1.1
Pierce	40,451	2.7	3,087	2.1	13,104	0.6
Pike	20,727	2.8	1,492	0.8	13,892	2.0
Polk	169,775	0.0	10,488	-0.1	16,188	0.1
Pulaski	37,727	2.3	2,879	1.5	13,104	0.8
Putnam	81,168	1.6	4,735	1.4	17,142	0.2
Quitman	2,928	-0.1	238	-1.2	12,303	1.1
Rabun	61,406	3.4	4,469	3.4	13,740	0.0
Randolph	37,330	0.7	3,185	0.6	11,721	0.1

(continued)

Area	Wage and Salary Disbursements		Wage and Salary Employment**		Average Wage and Salary Disbursements Per Job	
	Amount, 1989 ($ thou.)	Real AARG* 1980-89 (%)	Number 1989	AARG 1980-89 (%)	Amount 1989 ($)	Real AARG* 1980-89 (%)
Richmond	2,056,145	3.5	106,785	2.6	19,255	0.9
Rockdale	400,550	7.1	20,816	6.5	19,242	0.6
Schley	18,556	2.3	1,253	1.8	14,809	0.5
Screven	69,412	0.4	4,619	-0.5	15,027	0.9
Seminole	34,318	1.3	2,713	1.3	12,649	0.0
Spalding	340,033	2.6	21,230	1.7	16,017	0.8
Stephens	181,871	2.5	11,278	2.1	16,126	0.5
Stewart	17,736	-0.3	1,409	-0.1	12,588	-0.2
Sumter	224,063	2.1	14,282	1.6	15,688	0.5
Talbot	13,598	1.0	986	-1.5	13,791	2.6
Taliaferro	3,737	0.4	372	-0.5	10,046	1.0
Tattnall	82,316	3.6	5,786	1.9	14,227	1.7
Taylor	30,072	0.4	2,046	-0.8	14,698	1.3
Telfair	68,690	2.3	4,932	2.0	13,927	0.3
Terrell	45,600	0.6	3,758	0.0	12,134	0.6
Thomas	306,998	2.0	19,174	1.7	16,011	0.3
Tift	290,922	3.1	18,180	2.5	16,002	0.6
Toombs	144,536	2.6	9,992	2.4	14,465	0.2
Towns	22,051	6.1	1,643	5.8	13,421	0.3
Treutlen	16,804	2.1	1,535	2.2	10,947	-0.1
Troup	561,503	4.8	29,896	3.9	18,782	0.9
Turner	28,088	-5.5	2,397	-3.2	11,718	-2.3
Twiggs	52,574	1.1	2,346	0.6	22,410	0.5
Union	41,970	4.8	3,352	3.7	12,521	1.0
Upson	163,472	0.6	10,707	0.0	15,268	0.6
Walker	279,210	4.0	16,635	3.4	16,784	0.6
Walton	158,563	2.1	10,625	1.6	14,924	0.5
Ware	272,908	0.0	16,446	0.5	16,594	-0.6
Warren	27,303	3.1	2,171	3.2	12,576	-0.1
Washington	170,022	3.2	9,290	2.2	18,302	1.0
Wayne	148,673	1.6	8,397	1.6	17,705	-0.1
Webster	6,911	1.0	530	-0.4	13,040	1.4
Wheeler	15,119	3.3	1,233	3.3	12,262	0.0
White	58,749	5.2	4,242	4.6	13,849	0.6
Whitfield	975,680	4.4	51,183	3.7	19,063	0.7
Wilcox	19,019	3.3	1,585	1.6	11,999	1.6
Wilkes	69,674	2.0	4,813	1.3	14,476	0.7
Wilkinson	87,111	3.0	3,909	1.7	22,285	1.2
Worth	52,399	-0.8	4,180	-0.6	12,536	-0.2

* Annual average rates of growth based on values for 1980 and 1989, adjusted for inflation by the U.S. CPI-U, all cities, all items averages for 1980 (82.4) and 1989 (124.0); 1982-84 = 100. Employment data are not adjusted for inflation.

** Employment in full- and part-time jobs, by place of work.

Source: Selig Center for Economic Growth, College of Business Administration, University of Georgia, based on data from the U.S. Bureau of Economic Analysis (December, 1990).

Second Airport ***continued from page 8***

Table 3

TOTAL EARNINGS AND EMPLOYMENT IMPACTS OF THE PROPOSED AIRPORT*

Expenditure Source	Total Earnings** Impact (millions of 1990 dollars)	Total Employment*** Impact (number of full and part-time jobs)
DIRECT SPENDING	516.481	20,012
Airlines	350.761	11,894
Air Support	50.741	2,340
Ground Transportation	35.115	1,838
Cargo/Freight	30.004	1,029
Government	28.482	1,254
Airport Tenants	21.378	1,657
INDIRECT SPENDING	501.282	27,549
Visitors	462.920	26,066
Travel Agents	26.362	950
Fuel	7.968	293
Crew	4.032	240
TOTAL	1,017.764	47,561

* Total impact of spending by row category, on all industrial sectors.
** Includes direct payroll expenditures plus induced earnings.
*** Includes direct employment plus induced employment.

Source: The Selig Center for Economic Growth, College of Business Administration, The University of Georgia.

According to the comparisons, the Georgia estimates appear to be on target, although the values tend to be conservative. On a per enplanement basis, the direct output impact of the second airport is $144; as expected, this is virtually identical to LAX. On the same basis, the direct impacts of Dallas Love Field and Hartsfield are $220 and $151, respectively. A direct per enplanement impact at Hartsfield ($151) that exceeds the impact attributed to the proposed airport by only $7 suggests that the impact estimates for the proposed airport are very accurate. The figure for Dallas Love Field is somewhat higher, suggesting that estimates for the Georgia facility may be conservative.

Comparing the sum of on- and off-site impact estimates for the proposed airport to those reported for other U.S. airports shows a combined direct and indirect per enplanement impact of $334 for the Georgia facility. Similar estimates for LAX and Dallas Love Field total $440 and $358, respectively. The slightly lower impact attributed to the proposed airport relative to LAX was expected, and results from relatively conservative assumptions regarding visitors' spending. For example, during the first year of operation, passengers at the second airport are expected to constitute only 40 percent of enplanements, 5 percent less than at LAX. Also, lengths of LAX visitors' stays are longer than those assumed for the proposed airport. In the case of Dallas Love Field, the estimate exceeds that of the proposed airport because of the differential in direct expenditures discussed earlier. No comparable estimates were available for Hartsfield.

SUMMARY

Expressed in 1990 dollars, the total economic impact of the proposed airport in 2000 is $2.6 billion. This output (gross receipts or sales) represents the combined benefit to the state of direct (on-site) and indirect (off-site) value-added spending, and the re-spending (multiplier effects) of these dollars. Direct value-added spending equals $523 million and generates a re-spending impact of

Table 4

TOTAL EARNINGS AND EMPLOYMENT IMPACT BY IMPACTED INDUSTRY

Numerical Designation of Industrial Aggregation	Industry Name	Total Earnings Impact[a] (Millions of 1990 Dollars)	Total Employment Impact[a, b] (Number of Jobs)
1	Ag, For & Fishery Services	8.139	472
2	For & Fishery Products	0.241	18
3	Coal Mining	0.209	10
4	Petroleum & Gas Mining	0.000	0
5	Other Mining	0.476	14
6	New Construction	0.000	0
7	M & R Construction	21.326	859
8	Food Products	16.027	558
9	Textile Products	3.690	163
10	Apparel	7.531	507
11	Paper Products	5.795	149
12	Printing & Publishing	10.539	399
13	Chem-Petroleum Refining	18.677	513
14	Rubber/Leather Products	4.377	180
15	Lumber/Furniture	2.982	143
16	Stone/Clay/Glass	2.111	75
17	Primary Metals	1.347	37
18	Fabricated Metals	3.425	122
19	Non-Electrical Machinery	2.945	99
20	Electric and Electronic	3.029	101
21	Motor Vehicles& Equipment	4.387	96
22	Other Transportation	5.303	132
23	Instruments	1.108	41
24	Other Manufacturing	1.499	69
25	Transportation	88.633	8304
26	Communication	14.560	341
27	Utilities	6.331	157
28	Wholesale Trade	38.841	1171
29	Retail Trade	95.780	6123
30	Finance	12.317	387
31	Insurance	18.407	575
32	Real Estate	6.826	669
33	Lodging & Amusements	93.749	7336
34	Personal Services	11.643	1156
35	Business Services	128.217	6389
36	Eating and Drinking	61.153	6634
37	Health Services	32.793	1086
38	Other Services	22.867	1830
39	Households	260.484[c]	646[d]
	Total	1017.764	47561

[a] Impact of spending by all industrial sectors (1-39) on specific row industry.
[b] Includes full and part-time jobs.
[c] The direct impact of payroll paid to employees of the airlines, airport tenants, cargo/freight, government, ground transportation, and air support is included in the entry for the household sector.
[d] Employees directly employed by the airlines, airport tenants, cargo/freight, government, ground transportation, and air support are included in their respective sectors (1-38).

Source: The Selig Center for Economic Growth, College of Business Administration, The University of Georgia.

$612.5 million, yielding a total direct output impact of $1.1 billion. This at-airport impact of $1.1 billion provides the best measure of the airport's worth; however, indirect impacts associated with spending by air travelers and other off-airport expenditures commonly are included in the broad definition of airport economic impact. Indirect (off-airport) value-added spending equals $692.4 million. The induced impact due to re-spending of the indirect expenditures totals $795.8 million. The total indirect output impact totals $1.5 billion. Ninety-two percent of the indirect output impact results from spending by visitors.

Broadly defined, the total earnings impact of the proposed airport in 2000 is slightly over $1 billion. At-airport expenditures and their re-spending account for $516.5 million in earnings. Off-airport expenditures combined with induced spending generate another $501.3 million. At-airport, off-airport, and induced employment impacts total 47,561 full- and part-time jobs. While most of the new jobs are in transportation (8,304), other sectors providing new jobs include: lodging and amusements (7,336), eating and drinking places (6,634), business services (6,389), retail trade (6,123), other services (1,830), wholesale trade (1,171), personal services (1,156), and health services (1,086).

The second Atlanta area airport probably will be sited in Northeast Georgia, in an area centered in Jackson County on Interstate 85 North. After some additional site searching, this area, which also includes portions of Barrow, Gwinnett, Hall and Walton counties, was deemed the best in terms of proximity to demand centers, which is a crucial element in ultimate location.

How applicable are these impact estimates to an airport sited at one of the alternative locations? That depends upon whether or not an airport located at another site can capture unmet regional aviation demand as effectively as the proposed Northeast Georgia airport. The fact that none of the alternative sites received as high a rating in regard to proximity to demand centers suggests that the others will not capture demand as effectively, and therefore, will provide smaller economic benefits to the state.

The closest runners-up for an airport site include one in North Georgia centered in Dawson County, and including portions of Cherokee, Forsyth, and Hall counties, and one in the north/northwest part of the state, including portions of Polk, Paulding, Floyd, and Bartow counties. Both of these search areas received an "average" rating regarding proximity to demand centers. Although these locations would generate slightly lower economic impacts, it should be emphasized that the difference probably is very small and by itself should not preclude these sites from serious consideration.

Because Georgia's economic growth during the last several decades has been stimulated and sustained by its increasingly important role as a regional, national, and international hub for air traffic, the state cannot afford to lose this advantage to competing hubs in neighboring states. Other cities in the Southeast are pressing for expansion of their air transportation facilities. Existing and projected capacity shortages at Hartsfield indicate the need for a second airport, if Georgia is to defend its role as the air transportation center of the southeastern United States, and if it wishes to foster continued economic progress.

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GEORGIA BUSINESS STATISTICS

SERIES	OCT 1990	SEPT 1990	AUG 1990	OCT 1989
Georgia Leading Indicators Index[1] (1969=100)	165.43	169.83	172.53	183.09
Georgia Coincident Indicators Index[1] (1969=100)	614.59	618.30	625.69	616.92
Nonagricultural Employment[2] (thousands)	3,010.3	3,006.2	3,009.2	2,983.4
Manufacturing Employment[2] (thousands)	554.5	554.9	561.4	571.1
Average Weekly Earnings, Manufacturing[2] (dollars)	375.44	382.34	378.94	370.46
Help Wanted Advertising, Atlanta Index[3] (1967=100)	144	158	166	220
Taxable Retail Sales[4] ($ millions)	3,974.7	3,877.3	3,933.7	3,439.4
Building Permits[5]				
Residential Housing Units, Private (thousands)	2.8	3.0	4.4	4.3
Value of Residential Housing ($ thousands)	189,955	197,902	278,411	266,748
Value of Nonresidential Construction ($ thousands)	161,963	219,369	178,239	204,281
Industrial Buildings	7,208	56,663	10,583	26,301
Office, Bank and Other Professional Buildings	26,361	28,382	23,155	16,329
Stores and Other Mercantile Buildings	26,973	30,621	49,326	42,766
Other	101,421	103,703	95,175	118,885
Consumer Price Index[6] (CPI-U, all items)				
South U.S. (1982-84 = 100)	130.7	129.7	128.7	123.0
South/Population more than 1,200,000	131.5	130.2	129.0	123.9
South/Population 450,000 - 1,200,000	131.9	130.7	129.8	124.5
South/Population 50,000 - 450,000	129.3	128.5	127.6	121.7
South/Population Less than 50,000	129.0	128.8	128.5	120.7
Atlanta (1982-84=100)[a]	130.8[b]	–	–	124.9[b]
Prices Received by Farmers, Georgia Index[7] (1977=100)	143[r]	144	139[r]	134
	1990:III	**1990:II**	**1990:I**	**1989:III**
Total Personal Income[8] ($ millions)	110,290	109,235	107,797	103,686

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[1] Georgia Economic Forecasting Project, Selig Center for Economic Growth, College of Business Administration, University of Georgia. Initial monthly values subject to revision.

[2] Labor Information Systems, Georgia Department of Labor.

[3] Series published by The Conference Board, Inc.

[4] Derived by the Selig Center for Economic Growth, College of Business Administration, University of Georgia, from data of the Sales and Use Tax System, Georgia Department of Revenue.

[5] U.S. Department of Commerce, Bureau of the Census.

[6] U.S. Department of Labor, Bureau of Labor Statistics, Southeastern Regional Office.

[7] Georgia Department of Agriculture, Georgia Agricultural Statistics Service.

[8] U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System.

[a] Atlanta index is average of each 6 months of the calendar year; base revised to 1982-84=100 as of January 1, 1988.

[b] Data are for 1st half, 1990, and 1st half, 1989, respectively.

[r] Revised

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THE OCCUPATIONAL OUTLOOK DURING THE 1990s

Jeffrey M. Humphreys

Thousands of Georgians will lose their jobs during the 1990-91 recession and thousands more will enter the labor force. The decline in help wanted advertising for Atlanta indicates that these job seekers face relatively poor prospects in the state's major labor market. Even during recessions, businesses place a limited number of help wanted advertisements. Although total employment declines, turnover and shifting needs provide opportunities for some job seekers, and some businesses grow as others contract. When it comes tolanding a job, the "right" match between employers' needs and an individual's skills is always a factor, regardless of the condition of the overall economy.

The needs of employers are constantly changing, and these shifts favor some occupations over others. The robust expansion of the 1980s tended to obscure such trends, encouraging some to pursue occupations that are unlikely to have good long-term opportunities. Now the economic slowdown is forcing many job seekers to evaluate emerging trends and their impact on the outlook for various occupations during the 1990s. Among the most influential of these trends are: (1) demographic changes related to the aging of the population; (2) the increasing role of automation and mechanization in production and the impact of new technologies; (3) the globalization of markets; (4) the expansion of services and the contraction of basic manufacturing; and (5) increasing opportunities for highly trained and educated workers and decreasing opportunities for those with the least skills and education.

The graying of the population affects both the supply of workers and the mix of goods and services that consumers will purchase. The pool of workers aged 16 to 25 is declining both as a share of the total labor force and in absolute terms. Increasing competition among employers will lead to higher wages and benefits in occupations - such as the military and food services - that employ young workers. The expanding elderly population and maturing babyboomers will boost demand for health services, convenience services, luxury goods, financial services, and travel. Similarly, demand may decline for youth-oriented products.

Productivity gains associated with new technologies will cut demand for industrial, office, and agricultural workers who perform routine tasks. On the other hand, employment opportunities will increase for technical, support, and professional workers who design, program, operate, and service the new machines, production processes, and technologies.

Advances in transportation and communications will continue to promote worldwide competition in product and labor markets. The net effect of market globalization on the U.S. economy is positive, but some occupations may suffer. As competitive pressures increase, low-skilled manufacturing occupations probably will be

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among the casualties.

The fastest growing occupations are those requiring the most education and training. Employment in executive, administrative, managerial, professional speciality, and technical occupations will grow more rapidly than average. Conversely, the occupations expected to have the slowest growth or actual employment losses are those demanding the least education and training. Employment in administrative support, clerical, production, repair, agriculture, and forestry occupations will either grow more slowly than average or decline. The service sector, which has a high proportion of workers with relatively limited education, will grow more rapidly than average. Even within this sector, however, many of the occupations expecting the fastest growth require the most training.

THE OUTLOOKS

The outlooks for specific occupations largely are based on annual average rates of employment growth for specific occupations, which are calculated from employment projections for the period 1988 to 2000, issued by the U.S. Department of Labor's Bureau of Labor Statistics. Descriptive outlooks for occupations are presented in the BLS's *1990-91 Occupational Outlook Handbook*. All growth rates reflect employment trends for the U.S; local experiences may differ due to local economic conditions. The average annual rate of employment growth for all occupations over the years 1988 to 2000 is 1.2 percent.

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Management

Due to the increasing complexity of business operations, the globalization of markets, and more extensive laws and regulations, employment in managerial and administrative occupations will grow at a 1.7 percent annual rate. Additionally, the trend towards a service-based economy favors above-average employment growth in managerial occupations, with jobs for engineering, mathematical, and natural sciences managers increasing rapidly. Competition for these jobs will be keen, however, since many engineers, mathematicians, and scientists qualify as potential candidates.

Projections suggest that the second fastest growing category of managerial occupations is food serving and lodging. College degreeholders in either hotel or restaurant management should find jobs easily. Pressures to reduce administrative costs and the growing numbers of large firms bode well for the employment of administrative services managers. Globalization of markets and heightened competitive pressures both at home and abroad will increase the demand for marketing, advertising, and public relations managers, promising faster than average employment growth. General managers and top executives currently account for about 35 percent of managerial jobs, but because firms are expanding areas of responsibility rather than creating new positions, the growth rate for this category is expected to be average. Managerial employment in government will stagnate and competition for these jobs will intensify.

Management Support

Overall, employment will grow at a 1.7 percent annual rate, but expected growth rates for specific occupations will vary considerably. For example, employment interviewers will benefit from the rapid growth of temporary help supply firms and personnel consulting firms; jobs in this field will increase at a 2.8 percent annual rate, faster than any other management support occupation. It should be noted, however, that the temporary help supply industry itself is quite vulnerable to downturns in economic activity, so employment interviewers may suffer layoffs during recessions.

Jobs for management analysts and insurance underwriters will increase approximately twice as fast as all other occupations. Most firms now find it more expedient to rely on management consulting firms for expertise, so the best jobs will go to those with advanced degrees or practical experience. The drawback is that

demand for management consultants varies directly with the economy so incomes typically drop during economic slowdowns.

The aging of the population, an increased proportion of working women, escalating health care costs, and increasing litigation favor rapid expansion of employment for insurance underwriters. Jobs will be abundant for those with college degrees in business, and job security usually is assured even during economic downturns.

Employment of accountants and auditors will increase faster than average, with the best jobs going to computer-literate college graduates who have some practical experience. Prospects are excellent for qualified applicants since the supply of new accountants is not keeping pace with demand. Conversely, demand for wholesale and retail buyers will be weak. Employment growth in this category will lag most occupations and competition for available jobs is likely to be fierce. A college degree will be required by most employers. During the 1990s, a retail shakeout is likely because market saturation, coupled with consolidations and bankruptcies, will further reduce the need for buyers.

PROFESSIONAL SPECIALTIES

Employment in this diverse sector will increase at a 1.8 percent annual rate. The fields of computer analysis, health care, and law will post the fastest growth and the sciences, engineering, and teaching will post moderate growth.

Computer and operations research analysts will enjoy bright prospects. Employment growth in these occupations should increase at triple the average rate. Technological advances, lower prices for computer hardware and software, more sophisticated users, and increasing recognition of the value of quantitative analysis in business decisionmaking are factors contributing to the favorable outlook. Applicants with college degrees in appropriate fields should have no difficulty obtaining employment. Conversely, those lacking either formal training or extensive experience will face keen competition because employers will expect applicants to be highly qualified.

The health care industry will grow rapidly during the 1990s. Factors favoring employment expansion include: (1) increased demand by middle-aged babyboomers for more health care; (2)the rapidly expanding elderly population with its commensurately high per capita consumption of medical services; (3) greater demand for health and rehabilitative services as part of mainstreaming the handicapped and mentally retarded; (4) rising demand for elective procedures such as cosmetic surgery; and (5) the escalating need for health care services for AIDS patients.

Within the health care field, therapists and registered nurses are likely to experience the most rapid employment growth. The job outlook is very promising for most types of therapists, and speech-language pathologists and audiologists. Many areas of the nation report shortages of registered nurses, especially for those trained in intensive care, medical-surgical, rehabilitative, geriatric, and long-term care. Current low enrollments in nursing schools suggest that employment prospects for nurses will remain bright for some time.

Employment of physicians will increase, but probably not as rapidly as demand for medical services. Since entry into U.S. medical schools is restricted to a small number, foreign medical schools have been an important source of new doctors in recent years. More stringent entrance exams for U.S. residencies and keener competition for these residencies are likely to curtail this, however. Physicians will face limited direct competition and will continue to command high levels of compensation.

Relative to most health care occupations, the employment of dentists and optometrists will expand slowly, at a rate that is approximately equal to the average for all occupations. Slower employment growth partially reflects advances in preventive dental care, but nevertheless, declining dental school enrollments and aging babyboomers suggest a gradual improvement in opportunities for new dentists. The demand for the services of optometrists will increase rapidly during the 1990s but productivity gains will moderate the need for new practitioners.

During this decade, employment of lawyers will increase at a 2.3 percent annual rate. Demand for services will increase due to growth in litigation of employee benefits, consumer safety, and environmental concerns. Increased access to legal services through legal clinics and prepaid legal assistance will also boost demand. The supply of lawyers is expected to grow more rapidly than demand, however, so new attroneys can expect intense competition for jobs and a gradual erosion of relative compensation. Some will have to work in related fields.

Overall, the sciences will post employment growth that modestly outpaces the average for all occupations. Employment of economists, psychologists, and biologists will increase more rapidly than for other scientific occupations. Chemists, geologists, geophysicists, oceanographers, agricultural and food scientists will face job expansion more typical of the sector, while forestry and conservation science will be among the slowest growing professions.

Most engineering occupations will experience little better than average growth, with the exception of electrical and electronic engineers who will benefit from commercial and government interest in communications equipment, computers, military electronics, and consumer-oriented goods. Research and development of computers, robotics, and automated products will generate new jobs for persons with appropriate training.

Employment of kindergarten, elementary, and secondary school teachers is expected to increase as fast as the average for all occupations. Competitive pressures for these jobs are likely to intensify because more attractive salaries are expected to stimulate enrollments in educa-

tion degree-granting programs as well as in alternative certification programs. Teaching jobs will be more available in the South and the West because of expanding numbers of school-age children in these regions.

Demographic trends suggest that the college-aged population will shrink through 1996. Faculty employment will stagnate during the early to mid-1990s, but will pick up again later in the decade when the college-aged population peaks just as a large proportion of current faculty nears retirement. Obviously, job prospects are likely to be better in some fields than others. For example, by siphoning off qualified persons, attractive nonacademic jobs for potential and incumbent faculty will benefit those seeking teaching positions in business, engineering, computer science, physical sciences, and mathematics.

Employment of reporters and correspondents will grow at the same pace as the average for all occupations. The new jobs primarily will be generated by small town or suburban daily or weekly newspapers. Cub reporters probably will obtain their first jobs on smaller papers because competition for openings at large metropolitan papers will be very intense. Job turnover is high, however, creating opportunities for those who persist. Reporters and correspondents usually do not lose their jobs during recessions, but declines in advertising revenues often result in hiring freezes. Journalism graduates often obtain employment in related fields such as advertising and public relations.

Technicians and Related Support

These workers assist professionals in various fields, often by operating and programming technical equipment. New jobs for technicans will be generated at an annual rate of 2.3 percent. The fastest growing occupations in this group include radiologic, medical records, and surgical technicians, computer programmers, legal assistants, and licensed practical nurses. Employment of broadcast technicians and library technical assistants will grow slowly.

New uses of imaging equipment combined with the greater health care needs of an aging population will lead to a dramatic increase in the demand for radiologic technologists. Employment projections indicate an annual average growth rate of 4.3 percent. High turnover rates in radiation therapy technology plus growing demand create a market that is highly favorable for job seekers. Shortages of trained technologists already are evident and should persist throughout the decade. Similarly, surging demand for health services will boost demand and employment for registered nurses, surgical technicians, and licensed practical nurses.

Greater emphasis on controlling health care costs and on documenting the quality of medical care will boost demand for medical records technicians. The increasing complexity of the job and automation of routine recordkeeping will prompt employers to hire more highly trained medical record technicians, so the outlook for these skilled persons is excellent.

Hiring of computer programmers will expand at a rapid 3.3 percent annual rate, although job seekers will face a competitive market. The supply of trained programmers is outstripping demand and persons without a college degree or considerable experience now will find it far more difficult to obtain a job.

Legal assistants, especially paralegals, will be sought after because they are a cost-effective means of handling routine legal tasks. Competition for paralegal jobs will not diminish, however, because many are choosing this career. Nonetheless, graduates of good paralegal schools will have little difficulty obtaining employment.

During the '90s, the needs of libraries are unlikely to compete well with other public sector needs and, as a result, are likely to receive a smaller share of government budgets. Slower growth of school and college-aged populations will limit employment opportunities at academic libraries. The outlook for library technicians calls for slower than average employment growth; those with good computer skills will have the best prospects. Technical advances will trim jobs for broadcast technicians as well, and employment opportunities for them will decline at an average annual rate of 2.9 percent.

Marketing and Sales

Hiring in marketing and sales should increase at a 1.5 percent average annual rate, or slightly higher than the 1.2 percent rate projected for all occupations. The fastest growing fields are for securities and financial services sales workers, travel agents, and counter and rental clerks. Other marketing and sales occupations will grow at close to the average rate for all occupations. The outlook for counter and rental clerks is good because demand will expand just as demographic forces shrink the pool of workers aged under 25 who traditionally fill these jobs. Employment of travel agents will jump as professions that do the most business travel expand (e.g. management, professional speciality, and sales representatives). In addition, the economically-sensitive travel industry will benefit from the impact of rising personal incomes and a growing proportion of middle aged and elderly travelers.

Securities and financial services sales workers will face a rapidly expanding but highly competitive job market. Growth will be spurred by rising personal incomes and greater inherited wealth. Like the travel industry, however, the fortunes of this sector are cyclical.

Administrative Support

Overall, this category's annual rate of growth is projected at only 0.7 percent. Below average employment growth reflects two trends: technological improvements which reduce manpower requirements for many routine tasks, and the many extremely complex support functions which must be performed by highly trained technicians. Among the fastest growing admin-

istrative support occupations are information clerks and computer and peripheral equipment operators. Occupations that will exhibit relatively modest growth include communications equipment operators and secretaries; those likely to post little or no growth include bank tellers and records processing clerks. Employment losses will affect stenographers, typists, word processors, meter readers and proofreaders. Declining employment in these occupations results primarily from the increased use of automated and electronic equipment that either completely eliminates the need for support workers or enhances staff productivity so that fewer are needed.

Expansion of the services sector should boost demand for information clerks, an excellent occupation for those seeking part-time employment. Today's affordable, flexible, high-capacity computer software and equipment suggest strong employment growth for computer and peripheral equipment operators. Growth rates may gradually decline, however, as smaller, user-friendly systems become the norm.

Employment of communications equipment operators should increase at the average rate for all occupations. Within this group, switchboard operator jobs will increase relatively rapidly, although jobs for directory assistance and central office operators will decline as communications systems become more automated.

Secretarial positions should increase at a 1.3 percent annual rate, reflecting positive forces stemming from rapid increases in the number of professional office workers and negative pressures flowing from technological innovations. Turnover should ensure excellent entry-level jobs for well-trained secretaries. The outlook for legal and medical secretarial employment also is excellent.

SERVICES

The service sector will continue to be a primary source of new jobs. Employment in service occupations will increase at an average annual rate of 1.7 percent. Health service jobs will increase rapidly, particularly for medical assistants (up an annual 4.5 percent). Other health service occupations with excellent outlooks include nursing aides, psychiatric aides, pharmacy assistants, and physical and corrective therapy assistants and aides.

Rising personal incomes and greater numbers of single-person households and dual-income families will boost demand for food services. Employment opportunities will abound for waiters, bartenders, cooks, and bakers. These high-turnover jobs usually require little formal training and provide ample opportunities for part-time employment. Typically filled by workers under 25, the available labor pool will shrink during the decade, forcing employers to offer more favorable compensation packages in order to attract and retain staff. Spot shortages in some regions could lead to wide variations in pay.

The employment outlook for correctional officers is excellent, with an expected 2.9 percent annual rate increase. Growing inmate populations are forcing prison construction and expansion, thereby generating jobs for additional correctional officers. Other protective service occupations also offer solid employment opportunities as private businesses devote greater resources to controlling crime, vandalism, and terrorism. Jobs for guards will be particularly plentiful. Employment of police, detectives, and special agents will increase about as fast as the average for all occupations, although relatively attractive salaries and pensions are likely to result in keen competition for these positions. The number of firefighting jobs will increase slowly and competition will be intense. Firefighter jobs probably will be most available in small or suburban communities with rapidly expanding populations.

Job openings for childcare workers will increase at an average annual rate of 2.1 percent primarily due to rising labor force participation rates for young mothers and changes in parents' choices for childcare arrangements. More and more, parents are electing to put their children into formal daycare centers rather than leaving them with relatives or making alternative plans for at-home care. As centers begin to take in infants, the need for childcare workers will increase. In addition, requirements to reduce child-to-worker ratios in some states also will prompt the need for more daycare workers.

Employment of janitors and cleaners is expected to increase about as fast as the average for all occupations. Because no formal training is required, full- and part-time janitorial work should be abundant. Building maintenance companies probably will provide the bulk of these new jobs.

An average annual rate of employment growth of 1 percent is expected for cosmetologists. Factors underlying this growth include increasing numbers of professional working women, higher incomes, increasing proportions of male patrons, and expansion of full service salons. Conversely, jobs for barbers will stagnate.

Agriculture, Forestry, Fishing

Farming and forestry employment will decline during the 1990s, although this reflects productivity increases rather than shifting demand for farm and forestry products. Fishing, hunting, and trapping employment should increase at a 0.9 percent annual rate. The small gains will occur mostly in fishing, where productivity gains will be limited and demand for products will grow. Hunting and trapping employment will stagnate or decline.

Mechanics, Installers, Repairers

The employment growth rate in this sector will be slightly below the average for all occupations. Jobs for machinery and electrical mechanics, installers, and repairers will increase. With the notable exception of the communications equipment sector, employment prospects for most mechanics, installers, and repairers are better

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TAXABLE SALES IN GEORGIA, 1989-1990

Suzanne A. Lindsay
and Marie McGrath Libbey

Georgia's total taxable sales reached almost $70.7 billion in 1990. The year's 4.1 percent increase was substantially higher than that for 1988-89, which was affected technically by the switch to a higher state sales tax rate. The rate of growth was less than the annual average 5.4 percent increase measured by the U.S. CPI-U Index for all items, however, indicating that taxable sales declined in real (inflation-adjusted) terms. Statewide retail sales, composed of food, apparel, general merchandise, automobile, furniture, and miscellaneous sales, reached almost $47.5 billion, up 4.3 percent from the previous year.

By broad industrial group, sales increases varied from an 11 percent increase in the miscellaneous category to a drop of 4 percent in taxable manufacturing sales. In general, sales in the food (5.8 percent), apparel (7.9 percent), and utilities (7.9 percent) groups - each relatively less vulnerable to recession - expanded the most. Growth in housing-linked sectors such as furniture (4.1 percent) and lumber/construction (3 percent) was moderate, while the automobile sector showed a slight dollar loss that rounded to 0.0 percent change. Taxable sales in services expanded by 4 percent (Table 1).

At the county level, 129 counties showed increases in total taxable sales, while 30 lost ground. (Retail sales data are not available for counties.) Five metropolitan counties, Cobb, Fulton, Gwinnett, Richmond, and Chatham, each registered taxable sales gains of over $100 million, as did one nonmetropolitan county, Bulloch. With total taxable sales of almost $11.7 billion, Fulton County retained its position as the state's leader, followed by the metropolitan counties of DeKalb, Cobb, Gwinnett, Chatham, Richmond, Clayton, Muscogee, Bibb, and Dougherty counties. By percentage change in taxable sales, however, eight of the top ten counties were non-metropolitan. Echols County, which led with a taxable sales increase of 68 percent, also ranked last in amount of taxable sales. By percentage change, it was followed by Quitman, Twiggs, Bulloch, Banks, Telfair, Long, Columbia , Madison (the two metropolitan counties) and Brantley counties. The greatest loss in taxable sales occurred in Talbot County, where sales dropped by almost 39 percent, and Laurens County, where they declined by 15.6 percent.

With an increase of 19.2 percent over 1989 levels, Augusta led the taxable sales change among Georgia's metropolitan statistical areas, followed by Athens, Albany, Savannah, Atlanta, Macon-Warner Robins, Columbus, and Chattanooga (Table 2). Taxable sales estimates for the Augusta, Columbus, and Chattachoochee MSAs include only the Georgia portion of each area; equivalent data for out-of-state counties are not available. Atlanta continued to dominate in dollar value, accounting for 53.8 percent of statewide taxable sales in 1990, up slightly from 1989. As a group, Georgia's 38 metropolitan counties accounted for 70.9 percent of taxable sales, a very slight increase over the preceding year. Nonmetropolitan counties' share dropped slightly, to 29.1 percent.

Taxable sales are computed by the Selig Center for Economic Growth, using data from the Sales and Use Tax System of the Georgia Department of Revenue. The estimates are based on sales and use taxes paid on all taxable items, as reported by firms selling or acquiring them, including penalties and interest. The data for 1990 are the first full calendar-year estimates under the 4 percent state sales tax rate. Because the 1989 estimates included the shift to a higher tax rate in April, the 1989-90 comparison at both state and county levels may still reflect technical computational changes required by the shift. The effect of such changes cannot be determined. (See *Georgia Business and Economic Conditions*, March-April 1990.)

Table 1

Taxable Sales in Georgia, 1989-1990, by Industry and County
(Sales reported in thousands of dollars)

	Total 1989	Total 1990	Annual Percentage Change 1989-90		Total 1989	Total 1990	Annual Percentage Change 1989-90
Industry				**Industry**			
Food	14,862,665	15,717,910	5.8	Lumber,Const.	4,349,163	4,484,732	3.1
Apparel	1,814,863	1,958,565	7.9	Services	5,614,210	5,837,990	4.0
Gen'l Merch.	9,060,999	9,332,756	3.0	Manufacturing	4,241,774	4,070,312	-4.0
Automotive	10,800,924	10,798,228	0.0	Utility	8,192,998	8,841,871	7.9
Furniture	4,259,047	4,433,084	4.1				
Miscellaneous	4,704,164	5,220,402	11.0				
Total Taxable Retail Sales	45,502,662	47,460,944	4.3	**Total Taxable Sales**	67,900,806	70,695,850	4.1
County				**County**			
Appling	125,835	129,364	2.8	Columbia	273,913	343,467	25.4
Atkinson	27,478	28,418	3.4	Cook	96,789	93,207	-3.7
Bacon	128,967	125,764	-2.5	Coweta	427,631	450,213	5.3
Baker	9,285	9,472	2.0	Crawford	18,812	18,405	-2.2
Baidwin	278,876	300,038	7.6	Crisp	222,436	224,002	0.7
Banks	58,497	76,597	30.9	Dade	69,639	79,235	13.8
Barrow	214,190	211,902	-1.1	Dawson	43,085	45,602	5.8
Bartow	442,471	467,265	5.6	Decatur	272,383	264,255	-3.0
Ben Hill	124,062	126,532	2.0	DeKalb	7,432,977	7,458,219	0.3
Berrien	98,680	95,336	-3.4	Dodge	87,350	93,199	6.7
Bibb	1,794,332	1,803,654	0.5	Dooly	82,194	84,198	2.4
Bleckley	45,502	47,277	3.9	Dougherty	1,214,017	1,278,587	5.3
Brantley	47,765	57,110	19.6	Douglas	599,048	643,226	7.4
Brooks	52,962	54,997	3.8	Early	177,690	187,298	5.4
Bryan	103,877	113,752	9.5	Echols	2,182	3,666	68.0
Bulloch	333,447	442,345	32.7	Effingham	99,954	110,234	10.3
Burke	91,082	94,503	3.8	Elbert	135,399	140,092	3.5
Butts	161,239	166,428	3.2	Emanuel	128,934	139,305	8.0
Calhoun	19,677	20,746	5.4	Evans	105,971	106,722	0.7
Camden	174,476	188,728	8.2	Fannin	114,267	119,940	5.0
Candler	75,542	81,960	8.5	Fayette	352,328	368,989	4.7
Carroll	629,311	630,416	0.2	Floyd	807,114	844,481	4.6
Catoosa	317,674	319,100	0.4	Forsyth	440,892	458,330	4.0
Charlton	42,054	44,364	5.5	Franklin	155,650	168,266	8.1
Chatham	2,750,271	2,878,079	4.6	Fulton	11,237,573	11,667,890	3.8
Chattahoochee	15,393	17,462	13.4	Gilmer	113,492	122,868	8.3
Chattooga	130,161	150,522	15.6	Glascock	4,587	4,999	9.0
Cherokee	414,252	428,446	3.4	Glynn	862,146	919,340	6.6
Clarke	1,011,616	1,030,785	1.9	Gordon	337,823	346,919	2.7
Clay	11,622	13,395	15.3	Grady	147,560	160,900	9.0
Clayton	2,035,509	2,098,987	3.1	Greene	82,119	85,447	4.1
Clinch	42,256	43,304	2.5	Gwinnett	4,272,683	4,582,933	7.3
Cobb	5,450,613	5,923,808	8.7	Habersham	294,577	282,082	-4.2
Coffee	266,837	281,640	5.5	Hall	1,104,901	1,124,353	1.8
Colquitt	328,677	335,837	2.2	Hancock	27,450	32,276	17.6

County	Total 1989	Total 1990	Annual Percentage Change 1989-90	County	Total 1989	Total 1990	Annual Percentage Change 1989-90
Haralson	139,094	146,617	5.4	Pulaski	46,547	44,949	-3.4
Harris	123,818	131,329	6.1	Putnam	81,094	85,828	5.8
Hart	147,685	157,045	6.3	Quitman	5,883	8,514	44.7
Heard	21,594	23,476	8.7	Rabun	96,284	104,343	8.4
Henry	331,064	346,721	4.7	Randolph	50,740	55,539	9.5
Houston	642,142	684,391	6.6	Richmond	2,139,241	2,332,089	9.0
Irwin	38,567	40,096	4.0	Rockdale	584,215	615,288	5.3
Jackson	396,625	442,645	11.6	Schley	17,290	17,455	1.0
Jasper	35,140	38,281	8.9	Screven	94,239	102,679	9.0
Jeff Davis	164,324	158,900	-3.3	Seminole	81,596	91,444	12.1
Jefferson	152,334	162,752	6.8	Spalding	478,953	491,739	2.7
Jenkins	46,393	47,601	2.6	Stephens	198,695	206,953	4.2
Johnson	28,170	26,910	-4.5	Stewart	22,288	22,765	2.1
Jones	97,061	88,504	-8.8	Sumter	245,854	230,230	-6.4
Lamar	83,275	86,480	3.8	Talbot	45,951	28,148	-38.7
Lanier	32,455	30,465	-6.1	Taliaferro	7,005	6,484	-7.4
Laurens	484,709	409,060	-15.6	Tattnall	109,999	114,115	3.7
Lee	25,315	26,383	4.2	Taylor	165,438	164,229	-0.7
Liberty	228,918	233,160	1.9	Telfair	60,906	78,668	29.2
Lincoln	29,853	32,691	9.5	Terrell	55,802	52,733	-5.5
Long	6,516	8,294	27.3	Thomas	365,953	388,005	6.0
Lowndes	844,825	861,534	2.0	Tift	380,430	382,364	0.5
Lumpkin	96,997	103,780	7.0	Toombs	230,151	242,179	5.2
Macon	86,594	93,386	7.8	Towns	68,618	71,785	4.6
Madison	55,108	66,626	20.9	Treutlen	21,169	21,225	0.3
Marion	22,737	21,789	-4.2	Troup	655,237	652,492	-0.4
McDuffie	155,425	168,375	8.3	Turner	50,412	50,853	0.9
McIntosh	62,823	62,070	-1.2	Twiggs	45,207	62,014	37.2
Meriwether	137,172	136,567	-0.4	Union	73,327	74,389	1.4
Miller	37,824	40,669	7.5	Upson	167,514	172,228	2.8
Mitchell	140,208	143,647	2.5	Walker	308,659	305,805	-0.9
Monroe	98,029	105,470	7.6	Walton	319,406	333,709	4.5
Montgomery	22,830	23,138	1.3	Ware	307,651	316,650	2.9
Morgan	100,852	106,813	5.9	Warren	19,361	21,902	13.1
Murray	141,596	163,402	15.4	Washington	187,006	183,417	-1.9
Muscogee	1,819,604	1,842,128	1.2	Wayne	220,618	263,147	19.3
Newton	308,801	312,227	1.1	Webster	5,274	6,104	15.7
Oconee	63,062	68,888	9.2	Wheeler	22,475	23,562	4.8
Oglethorpe	36,518	36,465	-0.1	White	169,056	180,217	6.6
Paulding	205,873	198,599	-3.5	Whitfield	1,250,271	1,266,576	1.3
Peach	152,530	166,571	9.2	Wilcox	19,732	22,446	13.8
Pickens	205,009	202,604	-1.2	Wilkes	109,214	115,630	5.9
Pierce	69,307	71,421	3.0	Wilkinson	171,099	150,896	-11.8
Pike	30,599	31,654	3.4	Worth	92,272	92,098	-0.2
Polk	203,247	200,873	-1.2				
				TOTAL	67,900,806	70,695,850	4.1

Note: Figures rounded to the nearest thousand dollars. Percentages computed on unrounded dollars.

Note: As of April 1, 1989, the Georgia state sales tax was raised from 3 to 4 percent. This change in the base taxation rate makes year-to-year comparisons of sales for 1989 and 1990 difficult.

Source: Derived by the Selig Center for Economic Growth, College of Business Administration, The University of Georgia, from data of the Sales and Use Tax System, Georgia Department of Revenue. Sales include the value of all taxable items, as reported by firms selling or acquiring them, plus penalities and interest collected.

Table 2

State Total Taxable Sales, By Metropolitan Statistical Area*, 1989, 1990, with Percentage Change and Percent of State Total (Thousands of Dollars)

Area	Total Taxable Sales (Thousands of Dollars) 1989	1990	Percentage Change 1989-90	Percent of Total State Taxable Sales 1990
Albany MSA	1,239,332	1,304,970	5.3	1.9
Athens MSA	1,526,411	1,608,943	5.4	2.4
Atlanta MSA	35,267,246	36,757,652	4.2	53.8
Augusta MSA*	429,338	511,843	19.2	0.7
Chattanooga MSA*	695,973	704,140	1.2	1.0
Columbus MSA*	1,834,997	1,859,591	1.3	2.7
Macon Warner-Robins MSA	2,686,065	2,743,120	2.1	4.0
Savannah MSA	2,850,225	2,988,314	4.8	4.4
Total MSA Counties	46,529,586	48,478,572	4.2	70.9
Total Non-MSA Counties	19,231,979	19,885,189	3.4	29.1
State Total	65,761,565	68,363,761	4.0	100.0

*Georgia counties only.

Source: Selig Center for Economic Growth, based on data of the Sales and Use Tax System, Georgia Department of Revenue, February 1991.

Occupations continued from page 5

than the growth rates suggest because increases in the supply of new workers are unlikely to outpace increases in demand. Employment opportunities for well-schooled or experienced workers should be plentiful. Nonetheless, jobs for installers and aircraft mechanics will remain sensitive to economic fluctuations

In contrast, employment of communications equipment mechanics, installers, and repairers will decline at a 1.5 percent average annual rate. The losses reflect productivity increases associated with the transition from an electro-mechanically based communication system to a electronic one. Satellites, fiber optic cables, and microwave communication equipment coupled with increased system centralization are some of the major reasons for sectoral job shrinkage.

Increases in the number of vehicles and the production of light weight and collision-vulnerable models suggest that jobs for automotive body repairers and mechanics will be plentiful. In addition, the mechnical complexity of new cars means that it will take a professional to do necessary repairs, but since these new vehicles require less routine maintenance, mechanics' workloads will be reduced.

Increases in demand for air travel, particularly growth of the general aviation industry, could produce shortages of aircraft mechanics. Almost all of the new jobs will be in general aviation and few with the major airlines.

Construction

Due to the glut of existing structures, employment in most construction trades will increase slowly, if at all, during the next five years. By the mid-'90s, surplus commercial, office, and residential space will have been absorbed and construction-related employment will rebound. Jobs for roofers, carpet installers, and plumbers are less affected by economic swings, however, because of renovation, replacement, and repair.

According to BLS projections, which probably are overly optimistic, employment in most construction trades will increase at about the average rate for all occupations. Given the current building surplus, employment growth rates are likely to be lower than BLS projections, with few gains occurring during the early '90s. Tile setters and carpet installers are two job specialties likely to do well.

PRODUCTION

Employment is expected to stagnate or decline over the next ten years. Increased productivity, automation, outsourcing of production, and import competition will eliminate production jobs. Job loss rates will be fastest for assembly and textile workers. Occupations bucking the trend by adding jobs include printing, electric power plant operators, and water/wastewater plant operators. Scant employment gains are expected for precision metal and wood workers.

The increased use of automated manufacturing systems, robotics, and outsourcing assembly to countries with low wage labor is expected to exact a heavy toll of domestic assembly jobs. Employment of precision assemblers will decline at a annual rate of 2.5 percent. Jobs for electric and electronic assemblers will disappear even faster because the items they make are ideally suited for automated production.

No employment gains are expected for butchers or meat, poultry, and fish cutters primarily because of consumers' changing lifestyles and eating habits. Still, employment opportunities should be good because of high replacement demands and limited entry by new workers.

Employment of product inspectors, testers, and graders will decline as production methods are improved and refined. The outlook for these positions will be better in service industries where testing and inspecting is more complicated than in basic manufacturing.

Job gains by machinists will be tempered by competition from imports, technological changes, and substitution of nonmetal for metal parts. These factors will decrease employment opportunities for metalworking machine operators. Conversely, materials substitution should create jobs for plastic-working machine operators. Though minimal employment gains are expected for tool and die workers, a large number of them are nearing retirement, which greatly enhances prospects for job seekers.

Employment in printing occupations is expected to expand at a 1.1 percent annual rate. New jobs will be created by surging demand for printed materials, which will more than offset substantial productivity gains associated with new printing technologies. The demand for offset lithographic press operators will be strong because offset printing is rapidly replacing traditional letterpress printing.

The rate of employment growth in woodworking occupations will be about half the average rate. The use of substitute materials and improvements in woodworking technology are slowing employment gains, although the trend to replace and/or restore woodwork on residential and commercial structures will improve the job outlook for architectural woodworkers.

Apparel workers and textile machine operators face a bleak future. Employment declines are expected as increased imports, automation, productivity gains, and offshore assembly reduce manpower needs. In order to compete with foreign goods, domestic manufacturers are investing heavily in more efficient machinery and equipment. Ultimately, domestic manufacturers will be very competitive, but will employ fewer workers. The best opportunities probably are for custom tailors or pressing machine operators who can work for manufacturers, retailers, drycleaners, and laundries.

Transportation and Materials Moving

Sectoral employment is expected to increase at a 0.9 percent annual rate. Bus driver jobs will increase at a slightly higher rate but competition will be keen for local transit and intercity jobs. Less competition is expected for the lower-paying school bus driver positions. Jobs for truckers will be fairly easy to obtain because rapid turnover eases entry for new drivers, although truckdrivers often face layoffs or substantial reductions in income during recessions. Employment in rail transport occupations is expected to decline at a rapid 1.4 percent annual rate. Job losses will occur as a result of strong competition from alternative modes of transportation and labor saving innovations. Subway worker employment will increase but competition for these relatively high paying jobs will be stiff. Employment in water transportation occupations will stagnate and competition for these jobs will increase.

Positions for materials moving equipment operators will expand at a sluggish 0.3 percent annual rate. This lackluster outlook reflects the increased use of conveyor belts, computerized dispatching, lift mechanisms, and automated vehicles, all of which greatly reduce manpower needs. Slower growth of basic manufacturing is another reason for the scant employment gains.

Miscellaneous

Manpower needs for handlers, equipment cleaners, and laborers are unlikely to increase. Widespread use of automation will eliminate jobs in this sector at approximately the same rate that the expanding economy creates new jobs. Turnover is typically high, however, which should provide ample opportunities for those wishing to work.

Although little growth is expected in military employment, job opportunities should be excellent. A shrinking pool of 18- to 24-year olds and annual replacement demand should provide entry opportunities to applicants with high school degrees. While requirements for advancement continue to rise, the military does provide its personnel with ample access to educational programs to meet changing standards.

SUMMARY

The employment outlooks for specific occupations vary widely. In general, however, the best opportunities are in occupations that require considerable education and training. Job seekers will do well to aquire as much education and training as possible. At a minimum, a high school diploma or its equivalent will be needed for entry to most occupations; but many of the fastest growing fields will require even greater investments in education.

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Employment Growth table displayed on following pages

Annual Average Rates of Employment Growth in the U.S. for Selected Occupations, 1988-2000

Occupation	Annual Average Rate of Growth in Employment (Percent)
Total all occupations	**1.2**
Executive administrative and managerial occupations	**1.7**
Administrative services managers	2.0
Communication transportation and utilities operations managers	1.3
Construction managers	2.0
Education administrators	1.5
Engineering mathematical and natural sciences managers	2.4
Financial managers	1.5
Food service and lodging managers	2.1
General managers and top executives	1.2
Government chief executives and legislators	0.2
Industrial production managers	1.4
Marketing advertising and public relations managers	1.9
Personnel training and labor relations managers	1.6
Property and real estate managers	1.4
Purchasing managers	1.1
Management support occupations	**1.7**
Accountants and auditors	1.7
Budget analysts	1.3
Claims examiners property and casualty insurance	1.8
Construction and building inspectors	1.1
Cost estimators	1.2
Employment interviewers private or public employment service	2.8
Inspectors and compliance officers except construction	1.1
Loan officers and counselors	1.6
Management analysts	2.6
Personnel training and labor relations specialists	1.6
Purchasing agents except wholesale retail and farm products	1.1
Underwriters	2.2
Wholesale and retail buyers except farm products	0.5
Professional specialty occupations	**1.8**
Aeronautical and astronautical engineers	1.0
Chemical engineers	1.3
Civil engineers including traffic engineers	1.4
Electrical and elctronics engineers	2.8
Industrial engineers except safety engineers	1.3
Mechanical engineers	1.5
Architects except landscape and marine	1.8
Surveyors	0.9
Agricultural food scientists	1.5
Biological scientists	2.0
Foresters and conservation scientists	0.9
Computer systems analysts	3.6
Operations research analysts	3.7
Chemists	1.3
Geologists geophysicists and oceanographers	1.3
Economists	1.9
Psychologists	2.0
Clergy	0.6
Directors religious activities and education	0.9
Human service workers	3.1
Recreational workers	1.4
Social workers	2.1
Judges magistrates and other judicial workers	1.4
Lawyers	2.3
Teachers special education	1.2
Teachers preschool	2.2
Teachers kindergarten and elementary school	1.2
Teachers secondary school	1.5
College and university faculty	0.2
Librarians archivists curators and related workers	0.9
Counselors	2.0
Dentists	1.0
Optometrists	1.3
Physicians	2.1
Veterinarians and veterinary inspectors	1.8
Dietitians and nutritionists	2.0
Pharmacists	2.0
Physician assistants	2.2
Registered nurses	2.8
Therapists	3.0
Writers artists and entertainers	1.7

Occupation	Annual Average Rate of Growth in Employment (Percent)
Professional speciality occupations (continued)	
Artists and commercial artists	2.0
Designers	2.1
Musicians	0.8
Photographers and camera operators	1.5
Producers directors actors and entertainers	2.2
Public relations specialists and publicity writers	1.2
Radio and tv announcers and newscasters	1.4
Reporters and correspondents	1.3
Writers and editors including technical writers	1.9
Technicians and related support occupations	**2.3**
Clincial lab technologists and technicians	1.5
Dental hygienists	1.4
Emergency medical technicians	1.0
Licensed practical nurses	2.6
Medical records technicians	4.0
Opticians dispensing and measuring	2.4
Radiologic technologists and technicians	4.3
Surgical technologists	3.8
Engineering technicians	2.1
Drafters	1.0
Science and mathematics technicians	1.4
Aircraft pilots and flight engineers	2.2
Air traffic controllers	1.2
Broadcast technicians	-2.9
Computer programmers	3.3
Legal assistants and technicians except clerical	3.1
Technical assistants library	0.7
Marketing and sales occupations	**1.5**
Counter and rental clerks	2.1
Insurance sales workers	1.1
Real estate agents brokers and appraisers	1.3
Salespersons retail	1.5
Securities and financial services sales workers	3.7
Stock clerks sales floor	1.2
Travel agents	3.7

Occupation	Annual Average Rate of Growth in Employment (Percent)
Administrative support occupations including clerical	**0.9**
Adjustment clerks	1.6
Bill and account collectors	2.3
Insurance claims and policy processing occupations	1.0
Communications equipment operators	1.2
Computer operators and peripheral equipment operators	2.2
Financial records processing occupations	0.0
Information clerks	2.4
Mail clerks and messengers	0.8
Postal clerks and mail carriers	0.5
Dispatchers	1.1
Meter readers utilities	-0.7
Order fillers wholesale and retail sales	0.7
Procurement clerks	0.9
Production planning and expediting clerks	0.7
Stock clerks stockroom warehouse or storage yard	0.7
Traffic shipping and receiving clerks	0.8
Weighers measurers checkers and samplers recordkeeping	1.0
Brokerage clerks	0.3
Correspondence clerks	2.1
File clerks	0.8
Library assistants and bookmobile drivers	0.5
Order clerks materials merchandise and service	-0.1
Personnel clerks except payroll and timekeeping	0.7
Statement clerks	0.3
Secretaries	1.3
Stenographers	-2.2
Typists and word processors	-0.5
Bank tellers	0.4
Clerical supervisors and managers	0.9
Court clerks	1.6
Credit authorizers credit checkers and loan and credit clerks	2.0
Customer service representatives utilities	1.4
Data entry keyers except composing	-0.4
Duplicating mail and other office machine operators	0.8
General office clerks	1.4
Proofreaders and copy markers	-0.5
Real estate clerks	0.6
Statistical clerks	-0.1
Teacher aides and educational assistants	1.6

Occupation	Annual Average Rate of Growth in Employment (Percent)
Service occupations	**1.7**
Housekeepers institutional	2.7
Janitors and cleaners including maids and housekeeping cleaners	1.5
Pest controllers and assistants	1.3
Chefs cooks and other kitchen workers	1.6
Cooks short order and fast food	1.1
Food preparation workers	1.7
Bartenders	1.7
Dining room and cafeteria attendants and bar helpers	2.1
Food counter fountain and related workers	1.2
Hosts and hostesses restaurant lounge or coffee shop	2.2
Waiters and waitresses	2.3
Dental assistants	1.4
Medical assistants	4.5
Nursing aides and psychiatric aides	2.3
Pharmacy assistants	2.0
Physical and corrective therapy assistants and aides	3.7
Amusement and recreation attendants	1.8
Baggage porters and bellhops	1.9
Barbers	0.0
Child care workers	2.1
Cosmetologists and related workers	1.0
Flight attendants	2.8
Homemaker home health aides	4.2
Users lobby attendants and ticket takers	0.7
Child care workers private household	-0.6
Cleaners and servants private household	-0.2
Housekeepers and butlers	-0.2
Correction officers and jailers	2.9
Firefighting occupations	0.8
Police and detectives	1.0
Crossing guards	0.6
Guards	2.3
Other protective service workers	1.3
Agriculture forestry fishing and related occupations	**-0.4**
Animal caretakers except farm	1.2
Farm workers	-1.5
Nursery workers	1.5
Farm operators and managers	-1.7
Fishers hunters and trappers	0.9
Forestry and logging occupations	-0.4
Gardeners and groundskeepers except farm	1.8

Occupation	Annual Average Rate of Growth in Employment (Percent)
Construction trades	**1.3**
Bricklayers and stone masons	1.2
Carpenters	1.3
Carpet installers	1.6
Concrete and terrazzo finishers	1.4
Drywall installers and finishers	1.3
Electricians	1.4
Glaziers	1.4
Hard tile setters	1.7
Highway maintenance workers	0.7
Insulation workers	1.6
Painters and paperhangers construction and maintenance	1.3
Paving surfacing and tamping equipment operators	1.3
Pipelayers and pipelaying fitters	1.1
Plasterers	0.9
Plumbers pipefitters and steamfitters	1.4
Roofers	1.5
Structural and reinforcing metal workers	1.4
Extractive and related workers including blasters	0.3
Mechanics installers and repairers	**1.0**
Communications equipment mechanics installers and repairers	-1.5
Electrical and electronic equipment mechanics installers and repairers	0.8
Industrial machinery mechanics	1.3
Maintenance repairers general utility	1.4
Millwrights	1.3
Vehicle and mobile equipment mechanics and repairers	1.3
Other mechanics installers and repairers	0.3
Coin and vending machine servicers and repairers	0.0
Heat air conditioning and refrigeration mechanics and installers	1.3
Home appliance and power tool repairers	0.0
Office machine and cash register servicers	0.1
Precision instrument repairers	0.7
Tire repairers and changers	1.1
Production occupations precision	**0.0**
Assemblers precision	-2.4
Food workers precision	0.2
Inspectors testers and graders precision	-0.5

Occupation	Annual Average Rate of Growth in Employment (Percent)
Production occupations precision (continued)	
Metal workers precision	0.5
Printing workers precision	0.7
Textile apparel and furnishing workers precision	0.7
Woodworkers precision	0.8
Chemical plant and system operators	-1.8
Electric power generating plant operators distributors and dispatchers	1.0
Gas and petroleum plant and system occupations	-2.6
Stationary engineers	0.0
Water and liquid waste treatment plant and system operators	1.1
Operators fabricators and laborers	**0.1**
Machine setters set up operators operators and tenders	-0.3
Numerical control machine tool operators and tenders metal and plastic	0.7
Combination machine tool setters set up operators and tenders	0.7
Machine tool cut and form setters operators and tenders metal and plastic	-0.5
Metal fabricating machine setters operators and related workers	-0.9
Metal and plastic processing machine setters operators and related workers	0.2
Printing binding and related workers	1.1
Textile and related setters operators and related workers	-0.9
Woodworking machine setters operators and other related workers	0.6
Other machine setters set up operators operators and tenders	-0.4
Hand workers including assemblers and fabricators	**-0.9**
Cannery workers	-0.1
Cutters and trimmers hand	0.3
Electrical and electronic assemblers	-4.6
Grinders and polishers hand	-1.1
Machine assemblers	-1.1
Meat poultry and fish cutters and trimmers hand	1.3
Painting coating and decorating workers hand	-0.4
Solderers and brazers	-0.6
Welders and cutters	-0.4
Transportation and material moving machine and vehicle operators	**0.9**
Motor vehicle operators	1.2
Rail transportation workers	-1.4
Water transportation and related workers	0.1
Material moving equipment operators	0.3
Helpers laborers and material movers hand	**0.2**
Freight stock and material movers hand	0.2
Hand packers and packagers	-1.0
Helpers construction trades	1.1
Machine feeders and offbearers	-1.1
Parking lot attendants	1.2
Refuse collectors	0.0
Service station attendants	0.6
Vehicle washers and equipment cleaners	0.6

Source: Annual average rates of employment growth were calculated by the Selig Center for Economic Growth, College of Business Administration, The University of Georgia. Base employment data for 1988 and 2000 were obtained from the U.S. Department of Labor, Bureau of Labor Statistics.

GEORGIA BUSINESS STATISTICS

SERIES	DEC 1990	NOV 1990	OCT 1990	DEC 1989
Georgia Leading Indicators Index[1] (1969=100)	168.29	163.32	166.15	184.26
Georgia Coincident Indicators Index[1] (1969=100)	613.82	607.45	613.29	633.26
Nonagricultural Employment[2] (thousands)	3,019.7	3,019.7	3,013.5	3,084.2
Manufacturing Employment[2] (thousands)	550.6	552.7	554.0	571.0
Average Weekly Earnings, Manufacturing[2] (dollars)	392.08	379.55	374.63	383.11
Help Wanted Advertising, Atlanta Index[3] (1967=100)	159	139	144	236
Taxable Retail Sales[4] ($ millions)	4,783.2	3,812.4	3,974.7	4,676.8
Building Permits[5]				
Residential Housing Units, Private (thousands)	2.2	2.3	2.8	3.6
Value of Residential Housing ($ thousands)	141,030	159,878	189,955	194,705
Value of Nonresidential Construction ($ thousands)	116,556	176,896	161,963	171,941
Industrial Buildings	23,977	3,911	7,208	55,894
Office, Bank and Other Professional Buildings	7,086	51,357	26,361	21,375
Stores and Other Mercantile Buildings	28,165	33,591	26,973	28,554
Other	57,328	88,037	101,421	66,118
Consumer Price Index[6] (CPI-U, all items)				
South U.S. (1982-84 = 100)	130.9	130.9	130.7	123.4
South/Population more than 1,200,000	131.3	131.4	131.5	124.0
South/Population 450,000 - 1,200,000	132.2	132.1	131.9	125.1
South/Population 50,000 - 450,000	129.7	129.6	129.3	122.0
South/Population Less than 50,000	130.2	129.7	129.0	121.4
Atlanta (1982-84=100)[a]	132.6[b]	–	–	127.3[b]
Prices Received by Farmers, Georgia Index[7] (1977=100)	148	147[r]	143[r]	133
	1990:III	1990:II	1990:I	1989:III
Total Personal Income[8] ($ millions)	110,290	109,235	107,797	103,686

[1] Georgia Economic Forecasting Project, Selig Center for Economic Growth, College of Business Administration, University of Georgia. Initial monthly values subject to revision.

[2] Labor Information Systems, Georgia Department of Labor.

[3] Series published by The Conference Board, Inc.

[4] Derived by the Selig Center for Economic Growth, College of Business Administration, University of Georgia, from data of the Sales and Use Tax System, Georgia Department of Revenue.

[5] U.S. Department of Commerce, Bureau of the Census.

[6] U.S. Department of Labor, Bureau of Labor Statistics, Southeastern Regional Office.

[7] Georgia Department of Agriculture, Georgia Agricultural Statistics Service.

[8] U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System.

[a] Atlanta index is average of each 6 months of the calendar year; base revised to 1982-84=100 as of January 1, 1988.

[b] Data are for 2nd half, 1990, and 2nd half, 1989, respectively.

[r] Revised

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Georgia Business AND Economic Conditions

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THE FORECAST UPDATE: TURNING THE CORNER BY THANKSGIVING

Jeffrey M. Humphreys

Officially, the U.S. economy peaked in July 1990. Although Georgia's economy typically lags the national economy, the Selig Center's coincident indicators index suggests that the Georgia economy peaked in June 1990, a month before the Iraqui invasion of Kuwait. The recession is now approximately one year old, but there is little consensus regarding the timing of the recovery. Most forecasters currently expect the recovery to begin late in the second or early in the third quarter of 1991. The Selig Center's forecast is less sanguine, anticipating recovery for both the U.S. and Georgia economies in the fourth quarter of 1991.

In the wake of the Persian Gulf war, economic signals have been mixed: consumer confidence and the stock market surged, and so did unemployment and business failures. Home mortgage rates eased but are likely to resist further declines. Housing sales and prices remain weak. Construction and manufacturing activity is subdued. Retail markets, recently comatose, are still ailing. We believe that the economy is close to bottoming out but has yet to begin a sustained recovery. Although the bulk of layoffs has already occurred, the economy is likely to bump along the bottom for some time, posting marginal gains and losses into the fourth quarter of 1991. There is a long-shot 15 percent chance that the recession will end during the third quarter of 1991, but chances are better (60 percent) that the recession will end during the fourth quarter of 1991, and a weak recovery will follow. Conversely, there is a 25 percent chance that the recession will persist into 1992.

The mid-year forecast update does not differ substantially from that reported in last year's Georgia *Economic Outlook*. Inflation-adjusted personal income will decline by 0.9 percent in 1991, rebounding by 1.8 percent in 1992. The forecast calls for nonfarm employment to decline by 0.3 percent during 1991, a net loss of 7,900 jobs. As usual, the sectoral employment forecasts vary widely. Services and government will wring out small gains, and the remaining sectors will either languish or decline. Georgia's seasonally unadjusted unemployment rate is likely to peak at 7.5 percent in 1991 before subsiding to about 6.1 percent in 1992. When the recovery does begin, it will be weak, with nonfarm employment increasing by only 1.4 percent in 1992, a net gain of 41,700 jobs.

The recovery will be anemic because there are no major areas of growth to propel the economy. In spite of the euphoria following the Persian Gulf war, consumers remained wary and did not spend aggressively.

Debt accumulated by consumers, corporations, and government during the 1980s is postponing the recovery now and later will sap its strength. Consumers are paying down debts rather than taking on new obligations, and bankers are reluctant to make new loans. Corporate debt accumulated during the merger mania of the past decade is constraining investment spending. Recent attempts by the Federal Reserve to jump-start the economy by lowering the cost of capital to member banks have not been

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effective because even at lower rates, businesses and consumers are afraid to add debt. Currently preoccupied with recouping losses on bad loans, banks are keeping loan rates relatively high, adopting stricter capital requirements, and observing stringent lending standards. Such tightening probably is desirable from a long-term perspective, as long as deposits are federally insured, but negatively affects the timing and intensity of the recovery.

The federal government often attempts to use fiscal policy to manage the growth of the U.S. economy. Ideally, this policy is designed to soften recessions and curb inflation, thereby moderating swings in the business cycle. At a minimum, fiscal policy should be conducted in a manner than does not deepen recessions. Taxes as a percent of total personal income usually decline during recessions, which is a desirable countercyclical development, but during this recession the percentage has increased, pushing the economy deeper into trouble. Apparently the balance sheet problems now plaguing the federal government have led to a perversion of U.S. fiscal policy. Specifically, the deficit-reducing tax package passed last fall reduced consumer spending power at the worst possible time, deepening the recession. Some state and local governments also must share the blame for ill-timed tax hikes. Many of the states that were running deficits before the current recession began are facing choices among layoffs, tax increases, or a combination of the two.

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THE NATIONAL AND STATE OUTLOOKS

Georgia's state government probably will avoid both tax increases and layoffs, but hiring freezes, spending deferments for equipment and maintenance, and zero to 1.5 percent pay raises during the 1991-92 fiscal year are anticipated. These cutbacks and holdbacks have already deepened the recession and will mute the recovery. Georgia's total tax revenues are likely to increase by only 4.6 percent during the 1991-92 fiscal year. Since an increase in state revenues of more than 6 percent is needed to avoid a revenue shortfall, a budget cut of approximately 2 percent is likely during the coming fiscal year. Of course, if the recession extends into 1992, the gap between revenues collected and revenue targets will be far greater. Minimal employment gains are expected for state government during 1991 and 1992.

Local government revenues will probably fare somewhat better than state government revenues, and most local governments will continue to generate at least a few new jobs. Strong resistance to property tax hikes is developing, however, in some of the most heavily taxed localities. Nonetheless, the bulk of the new government jobs created during 1991 and 1992 will be at the municipal and county level.

One of the few growth areas in the U.S. and Georgia economies during the last few quarters has been the export sector. The recent deterioration in the outlook for foreign growth suggests that exports will not boost U.S. gross national product (GNP) during the remainder of 1991 and 1992. Technically, the rest of the world probably will avoid outright recession; however, foreign GNP will grow by less than 1 percent in 1991. The deleterious impact of the worldwide economic slowdown on U.S. exports makes it more difficult for the U.S. and Georgia economies to rebound. One of the few strong export markets that remains is the Middle East, where weapons sales and reconstruction activity are expected to surge.

In addition to slow rest-of-world growth, the recent rally in the U.S. dollar is crimping the demand for American exports. The dollar is expected to strengthen against foreign currencies through the first half of 1992 before resuming its downward slide. The stronger dollar weakens foreign demand for U.S. products and increases domestic demand for foreign products.

The U.S. economy went into recession before most of our trading partners and will emerge sooner, but being ahead of the curve will dampen the recovery. If the rest of the world goes into a prolonged recession, the U.S. and

Georgia economies are likely to remain in recession through the first half of 1992. Slower than expected rest-of-world growth is probably the greatest downside risk to the economic outlook for the U.S. and Georgia.

The news on the inflation front is good. Oil prices in the $18 to $20 per barrel range, slack demand, a stronger dollar, and limited increases in wages and salaries will dampen inflationary pressures. The forecast calls for inflation rates of 4.5 percent and 4 percent in 1991 and 1992, respectively. These projections compare favorably with the 5.4 percent rate posted in 1990.

The inflation outlook varies by expenditure category. The rate of commodity inflation will slow markedly during 1991 before rebounding slightly in 1992. Assuming normal weather conditions, the rate of food inflation will slide this year and next year. In contrast, inflation in medical care costs will not ease. Expensive advances in medical technology, new treatments, and strong underlying demand suggest that the cost of medical care will surge in 1991 and 1992. Although this recession has hit the services sector harder than past downturns, service prices are less sensitive to business cycles than are commodity prices. The rate of inflation for services therefore will increase slightly in 1991 before moderating in 1992. Energy prices declined sharply during the first half of 1991 but will increase during the remainder of the year before stabilizing in 1992.

GEORGIA'S SECTORAL FORECASTS

The state's manufacturing sector continues to bear the brunt of recession. For the third consecutive year, sectoral declines in real personal income and employment will affect both durable and nondurable manufacturing. During the last half of 1991, the industries most likely to suffer further include furniture and fixtures, lumber and wood products, transportation equipment, textile mill products, apparel and other finished textiles, and fabricated metal products. Industries that already have bottomed out include dairy products, floor covering mills, and chemicals. In contrast, meat products, bakery products, paperboard containers and boxes, and pulp, paper, and paperboard mills are likely to post small employment gains during 1991. The good news is that the manufacturing sector as a whole is expected to recover slightly in 1992, recouping 4,000 jobs.

Georgia's transportation, communications, and public utility sector took a hard hit during the first quarter of 1991 when Eastern Airlines closed down. United Parcel Services' recent decision to relocate its corporate headquarters to Georgia will partially offset employment losses associated with the loss of Eastern Airlines. Meanwhile, other airlines gradually are expanding local operations, but they are unlikely to fill the gap left by Eastern's bankruptcy until after the recession has run its course. Communications and public utility employment should increase slowly during the rest of 1991. The transportation, communications, and public utility sector as a whole will post only a small employment loss for the year and will begin to recover in 1992, adding 4,200 jobs.

A primary cause of the crisis in financial institutions was overbuilding of commercial, office, and multi-unit residential space. Because of the surplus, construction is likely to lag rather than lead the recovery. Construction employment will decline 4.6 percent in 1991 and decline by an additional 1.5 percent in 1992. It will take two years of discount selling to absorb the surplus commercial, office, and multi-unit residential space. Single-unit residential space is less overbuilt and activity in this area will bottom out during the first half of 1992, but the rebound will be very lackluster. In the meantime, stagnant or declining home prices make consumers feel poorer, restraining their spending and thereby moderating the recovery.

Because the retail market was saturated going into the recession, it was hard hit. Retailers of consumer durables, construction-related goods, discretionary items, and travel have suffered the largest contractions. In contrast, deep-discounters, secondhand and used merchandise stores, and do-it-yourself stores may have posted small gains. The good news is that retailers will be among the first to benefit from the recovery. The upturn should be underway by the beginning of the Christmas retailing season, ensuring a relatively solid finish to a very difficult year. Nevertheless, retailers should be guarded in their optimism because consumer spending will increase cautiously.

Employment growth in the services sector has slowed markedly but not stalled. The strongest businesses in this sector are mostly health-related. Repair services also have prospered during the recession. Conversely, business services and hotels and motels are suffering greatly. Demand for luxury, convenience, and easily postponed services will remain weak until recovery ensues later this year. Overall, the sector will generate 18,200 and 22,400 new jobs in 1991 and 1992, respectively.

See forecast table on page 4

GEORGIA PERSONAL INCOME FORECAST 1991-1992

Georgia	1987	1988	1989	1990	1991	1992
Total Personal Income[1]	78447.1	81776.0	83337.7	83982.2	83237.0	84717.0
Nonfarm Personal Income[1]	77438.3	80689.0	82227.7	83063.4	82326.9	83792.6
Earnings by Industry[1]						
Ag. Serv., For., Fish., Other	264.7	276.2	272.6	265.5	257.2	256.3
Mining	253.7	280.8	273.2	278.1	266.9	269.7
Construction	4047.5	4052.6	3797.4	3776.8	3578.6	3511.2
Manufacturing	12175.3	12178.6	11788.7	11548.3	11102.3	11251.3
Trans., Comm., Public Utilities	5743.6	5824.7	5675.8	5943.8	5902.0	6057.3
Wholesale and Retail Trade	11675.5	12352.9	12421.2	11900.2	11446.0	11550.2
Finance, Insurance, Real Estate	4237.7	4311.9	4259.1	4260.5	4194.2	4183.2
Services	12269.1	13332.8	14113.5	14937.6	15505.2	16197.9
Government	10006.9	10378.6	10692.7	10849.9	10982.4	11120.8
Farm Personal Income[a]	1008.8	1087.0	1110.1	918.9	910.1	924.4
Percent Change						
Total Personal Income	4.4	4.2	1.9	0.8	-0.9	1.8
Nonfarm Personal Income	4.5	4.2	1.9	1.0	-0.9	1.8
Earnings by Industry						
Ag. Serv., For., Fish., Other	16.3	4.3	-1.3	-2.6	-3.1	-0.4
Mining	5.6	10.7	-2.7	1.8	-4.0	1.1
Construction	-2.7	0.1	-6.3	-0.5	-5.2	-1.9
Manufacturing	2.5	0.0	-3.2	-2.0	-3.9	1.3
Trans., Comm., Public Utilities	5.7	1.4	-2.6	4.7	-0.7	2.6
Wholesale and Retail Trade	4.5	5.8	0.6	-4.2	-3.8	0.9
Finance, Insurance, Real Estate	13.5	1.8	-1.2	0.0	-1.6	-0.3
Services	9.6	8.7	5.9	5.8	3.8	4.5
Government	4.0	3.7	3.0	1.5	1.2	1.3
Farm Personal Income	-0.8	7.8	2.1	-17.2	-1.0	1.6

[1] Indicates millions of 1982-84 dollars.

[a] Farm income estimates are preliminary and subject to substantial revision on the basis of more complete data.

Source: The Georgia Economic Forecasting Project, Selig Center for Economic Growth, College of Business Administration, The University of Georgia, May 1991.

GEORGIA EMPLOYMENT FORECAST 1991-1992

Georgia	1987	1988	1989	1990	1991	1992
Nonfarm Employment[1]	2782.0	2878.1	2941.1	2995.5	2987.6	3029.3
Employment by Industry[1]						
Mining	8.5	8.9	8.8	8.7	8.4	8.5
Construction	152.2	149.9	146.3	147.3	140.5	138.4
Manufacturing	571.2	574.3	568.3	559.4	540.8	544.8
Trans., Comm., Public Utilities	175.4	182.3	188.6	197.9	197.4	201.6
Wholesale and Retail Trade	702.7	734.4	742.1	745.1	739.3	744.3
Finance, Insurance, and Real Estate	155.4	161.2	164.0	162.9	162.0	161.9
Services	539.9	573.1	610.9	640.5	658.7	681.1
Government	476.7	494.1	512.2	533.7	540.5	548.7
Total Taxable Sales[2]	56031.6	56760.7	54758.7	54090.2	52188.5	52983.5
Total Revenue[3]	4706.8	4831.0	5270.7	5295.2	5208.2	5304.7
Housing Permits (units)	64217	63017	50457	41251	37105	36319
Percent Change						
Nonfarm Employment	4.1	3.5	2.2	1.8	-0.3	1.4
Employment by Industry						
Mining	3.4	4.4	-0.6	-1.1	-3.4	1.2
Construction	0.2	-1.6	-2.3	0.7	-4.6	-1.5
Manufacturing	1.2	0.5	-1.0	-1.6	-3.3	0.7
Trans., Comm., Public Utilities	4.2	3.9	3.5	4.9	-0.3	2.1
Wholesale and Retail Trade	5.2	4.5	1.0	0.4	-0.8	0.7
Finance, Insurance, Real Estate	6.4	3.7	1.8	-0.7	-0.6	-0.1
Services	7.3	6.1	6.6	4.8	2.8	3.4
Government	3.1	3.7	3.7	4.2	1.3	1.5
Total Taxable Sales[2]	2.3	1.3	-3.5	-1.2	-3.5	1.5
Total Revenue[3]	5.5	2.6	9.1	0.5	-1.6	1.9
Housing Permits (units)	-16.5	-1.9	-19.9	-18.2	-10.1	-2.1

[1] Indicates thousands of workers.

[2] Indicates millions of 1982-84 dollars.

[3] Indicates Georgia Department of Revenue Collection, based on unaudited monthly data. This figure does not include amounts collected by agencies other than the Department of Revenue. Expressed in millions of 1982-1984 dollars.

Source: The Georgia Economic Forecasting Project, Selig Center for Economic Growth, College of Business Administration, The University of Georgia, May 1991.

Essay

THE SEEDS OF ENTREPRENEURSHIP

Dwight R. Lee

We are rich in opportunities and wealth because of the economic progress made possible by entrepreneurs. All economic progress results from individuals who seek to improve their conditions by subjecting themselves to the work and risks of entrepreneurship. Broadly speaking, entrepreneurship involves engaging in any enterprise with the hope of creating wealth, and includes everything from starting a restaurant to innovating an entirely new technology or product. While entrepreneurs of every type are important to our economic well-being, the most dramatic progress comes from the enterprise of a relative few. These are the entrepreneurs whose vision of the possible extends far beyond that of most, and whose legacy is a constant expansion in the realm of the realistic and the conversion of one generation's fantasies into the next generation's necessities.

In extolling our entrepreneurial heroes, however, we should not overlook the fact that no matter how fertile, the seeds of entrepreneurship cannot flourish without the proper economic soil, which is the right mixture of freedom and accountability provided only in a free market economy. When given freedom, entrepreneurs are a disruptive and threatening force. Any attempt to moderate this disruptiveness can succeed only by rendering entrepreneurship an empty and impotent imitation of the real thing. Entrepreneurial freedom does have to be disciplined, however, if it is to be productive. Fortunately, disciplining this freedom without stifling its disruptiveness is possible when the discipline is imposed through the marketplace.

Unfortunately, while the discipline of the market allows entrepreneurial freedom to be tolerated economically, it does not necessarily allow that same freedom to be tolerated politically. No matter how well disciplined or how productive it is, entrepreneurship remains a disruptive force that threatens existing economic patterns and entrenched economic interests. This disruptiveness leaves entrepreneurial freedom vulnerable to political subversion, which elevates the importance of understanding how important the free market is to the enormous benefits we all derive from entrepreneurial accomplishments.

TOLERATING ENTREPRENEURIAL FAILURE

The tendency to concentrate on the successes of entrepreneurial activity is understandable given the enormous benefits derived from those successes. But enormous benefits come only by accepting enormous risks, and it is important not to let the benefits of entrepreneurial successes blind us to the necessity of entrepreneurial failures. Indeed, a full appreciation of our entrepreneurial heroes is impossible without considering the risks of failure that they always confront and often experience. Furthermore, a full understanding of why market economies have developed while nonmarket economies have stagnated requires a careful consideration of why the former can tolerate entrepreneurial failure while the latter cannot.

Economic development depends on entrepreneurs who are convinced that they are right when everyone around them is sure that they are wrong. It is easy to forget that the technologies and products upon which we now depend were originally considered to be totally impossible. There can be no doubt that if initial support for the pursuit of entrepreneurial ventures required a majority vote, we would be living in an impoverished world. It is only because individual entrepreneurs have had the freedom to attempt what the more "sensible" majority knew was impossible that economic development has been possible.

It would be wrong to conclude, however, that most entrepreneurial ventures succeed and contribute to our economic well-being. Quite the opposite is true. Of the truly bold projects and "impossible dreams" pursued by entrepreneurs, only a small percentage end up adding more to our wealth than they deduct in terms of the time, talent, and resources expended on them. Most entrepreneurial ventures pursued in the hope of making major advances turn out to be exactly what most of us predict: impractical fantasies. Even those entrepreneurs who possess true genius may find themselves sentenced to permanent failure and obscurity by the magnitude of the challenges awaiting them. Of course, not all would-be

entrepreneurial heroes possess genius. Many differ from the rest of us not so much in their ability to conceive good ideas, but rather by their ability to become obsessed with their ideas and to pursue those ideas compulsively. Unfortunately, it is impossible to know in advance which entrepreneurial quests lead in the direction of economic progress.

The freedom to devote resources to the pursuit of improbable projects is a freedom that cannot be tolerated, however, without an accompanying freedom to fail. The failure itself has to be of a special type; it has to reflect the lack of economic contribution being made, and it has to bite hard and demand an appropriate response. By his very nature, the entrepreneur whose project fails to provide value to the consumer will be convinced that the consumer is mistaken, not that his idea is flawed. Such confidence is an essential ingredient of the entrepreneurial energy and persistence from which we have all derived so much benefit. Yet, unless entrepreneurial confidence is subordinated sternly to consumer preferences, the losses from the many entrepreneurial failures would persist and overwhelm the gains from the relatively few entrepreneurial successes.

Politically directed economies are incapable of achieving the progress that only entrepreneurs can generate for obvious reasons. Not only are too few bold entrepreneurial ventures allowed in such economies, but of those that are allowed, too many are continued for too long. Once a political commitment is made to a project, the strong tendency is for that project to be funded indefinitely even though the value it consumes far exceeds the value it produces.

The crucial task that faces every economy is to somehow obtain accurate information on the relative contributions being made by all economic activities, and then motivate the appropriate response to that information. It has to be possible to allow the more spirited entrepreneurs to be boldly innovative while simultaneously tempering their enthusiasm by making them accountable to others. Without the discipline of failure to force accountability to the general preferences of the community, entrepreneurial freedom will not be tolerated. The economic system that cannot impose failure which accurately reflects economic reality, cannot risk the entrepreneurial freedom that is necessary, though not sufficient, for economic progress.

COMMUNICATION, COOPERATION, AND FREEDOM

The economic accountability so necessary for entrepreneurial freedom and economic progress is not easily achieved. An ideal economic setting in this regard is one in which people are able to communicate accurately with each other, and to do so in a way that motivates them to respond cooperatively to the concerns and preferences of others.

It may seem that the existence of such an ideal system requires a level of technological sophistication and moral sensitivity that is easily dismissed as impossible. Yet, in the real world, a reasonable approximation to such an ideal system has been achieved in the form of free market capitalism.

Under the rules of private property and voluntary exchange, people relinquish resources only in return for compensation, typically in the form of a monetary price. Since people generally refuse to sell to a potential buyer at one price when others are willing to pay a higher price, the prices that materialize in the marketplace reflect how much resources are worth, at the margin, to those who place the greatest value on them. These prices are the signals with which each market participant communicates his preferences to all other market participants. It is important to recognize that strong incentives exist for people to communicate honestly through market prices. All market participants see advantage in assessing carefully and honestly the value they can realize from an additional unit of each commodity, and communicating their desire for the additional unit only if it is worth more to them than the prevailing market price. While it cannot be denied that, under some conditions, it is possible for suppliers to benefit by overstating the value of their products with high prices, it also is true that this problem is subject to the relentless corrective pressures of market competition.

Although people enter into market activity with the primary purpose of advancing their own objectives, in the marketplace each individual is motivated to cooperate with others as if he has the same concern for others' objectives as he does for his own. When an individual reduces his use of a product in response to an increased price, in effect he is saying, "Others are communicating to me that, at the margin, this product is now worth more to them than it is to me, so I will consume less so they can consume more." Similarly, economic failures such as those resulting in bankruptcies and unemployment can be thought of as if the victims of these failures are saying, "Others are communicating to me that they would value my resources more if they were employed in other activities, so I will respond to their preferences by either releasing resources for alternative uses or by shifting into another business venture or job."

No other type of economic system achieves anything close to the degree of communication, cooperation, and accountability that exists in free market economies. For this reason, only free market economies benefit from entrepreneurial freedom. This freedom can be tolerated because, under the discipline imposed by private property and voluntary exchange, entrepreneurs exercise their freedom with appropriate attention being given to the concerns of others. Free market economies create enormous opportunities for economic progress by making it possible to unleash the type of innovative entrepreneurial activity that would be risky in economies which lack the same degree of informed accountability.

TOLERATING ENTREPRENEURIAL SUCCESS

Entrepreneurs are disruptive, both when they fail and when they succeed. The market economy makes it possible to tolerate the disruptions of entrepreneurial failures. But can the political economy tolerate the disruptions of entrepreneurial successes? Ironically, the greater the potential benefit from an entrepreneurial enterprise, the more likely it is to provoke a negative response. Such a negative response would be insignificant in a political economy in which everyone is obligated to play by free market rules. Unfortunately, the response to entrepreneurial success often takes the form of political action which allows some to violate the rules of the marketplace. Such action reduces the economy's ability to benefit from entrepreneurship by both retarding the development of current entrepreneurial successes, and undermining the market accountability that makes possible the entrepreneurial freedom necessary for future successes.

Economic competition of every variety is beneficial to the general public, but never popular to those who are subjected to it. The greater the competition faced by suppliers, the lower their profits, the less their relaxation, and the more responsive they have to be to the mercurial preferences of consumers. It is the competition generated by successful entrepreneurials which, because it produces the greatest benefit for the consuming public, imposes the greatest threat to those facing it.

When confronted with the prospects of economic ruin, few established producers are comforted by the thought that their demise will contribute to the general well-being. Given the opportunity to protect their positions against entrepreneurial competition, few threatened producers are deterred from seizing that opportunity by arguments that doing so undermines general economic progress. Unfortunately, those threatened by the success of entrepreneurship do have the opportunity to reduce that threat at the expense of the general public. This opportunity arises because established producers protecting concentrated interests have a political advantage over emerging entrepreneurs serving diffused interests.

A cornerstone in the economic analysis of the political process, or public choice economics, is that politicians are more responsive to relatively small groups organized around common concerns than they are to large groups with diverse concerns. The motivation is great for individual members of a narrowly focused interest group to work in unison to push policies that promote their common advantage. Such policies typically impose costs on the general public which far exceed the benefits derived by the favored interest group. But because these costs are spread over so many, the motivation of any individual member of the public to oppose socially inefficient policies is small. When people incur the expense of engaging in political action, it is almost always for the purpose of supporting special interest policies that favor them, not opposing the special interest policies that favor others.

The entrepreneurial Davids may be able to slay the status quo Goliaths on the field of market competition, but when the battle is shifted to the field of political competition, the advantage is reversed. Existing producers who are organized around known products and technologies are better entrenched politically than economically. The entrepreneur with the new product or the unconventional technology may possess enormous economic potential, but has little political influence. An entrepreneur may be able to capture large numbers of consumers in open market competition against established producers, but has little chance of mobilizing large numbers of citizens for the purpose of overcoming political obstacles to that competition.

The industrial policy rhetoric calling for government assistance and subsidies for the "emerging growth industries of tomorrow" stands completely at variance with the reality of political information and motivation. If politicians knew which enterprises had the greatest economic potential, understood how best to realize that potential, and had the motivation to use this knowledge appropriately, then economic progress could thrive in the absence of entrepreneurs and markets. Indeed, it would be those economies with governments most actively substituting their plans for the trial and error of the marketplace that would experience the greatest economic progress. The facts, of course, reveal a reality quite the opposite.

Politicians do not know in advance what the most promising enterprises are, and they face strong pressures to suppress them as soon as they begin to emerge from market competition. The large, well-established firms with large numbers of organized employees, with a history of charitable and political generosity, and seen as vital to the regional (and even national) economy are those which are most threatened by entrepreneurial success and to which politicians are most obligated for their political success. Political response to the economic consequences of entrepreneurial activity often results in regulations and restrictions which hamper that activity, and in subsidies, tax breaks, bailouts, and protections for the firms being challenged by it.

This response to entrepreneurial challenges does more than obstruct entrepreneurial successes directly — it also undermines them indirectly. Government efforts to protect established producers against the competition of emerging entrepreneurial alternatives reduce both the accountability of the marketplace and the economic freedom this accountability allows. Lacking the political ability to tolerate entrepreneurial success, we undermine the economic ability to tolerate the freedom upon which entrepreneurial success, and economic progress, ultimately depend.

It is easy to yield to pessimism and conclude that the special interest political bias against entrepreneurship is impossible to overcome. Such pessimism is not only inappropriate, it is unwarranted. All special interests, no

matter how well organized, have to masquerade behind a public interest facade if they hope to achieve political success. Penetrate the public interest rhetoric that obscures the private interest reality of a special interest government policy and that policy is in political trouble.

ECONOMIC FAILURE AND MARKETPLACE FAIRNESS

Political protections of established interests against the competition of successful entrepreneurs are always justified as necessary for realizing such laudable objectives as maintaining employment, encouraging economic growth, achieving economic stability, protecting the tax base, and correcting the unfairness of the marketplace. This unfairness lies at the heart of all attempts to justify government intrusions into the economy in the name of public interest. The public interest surely demands fairness and how can the harsh failure that the market is about to impose on a well- established enterprise and its loyal employees be fair? Illuminating the fairness of the market process, and exposing the special interest motivation behind support for government usurpation of the market in the name of fairness, is a formidable challenge. For the very reasons that the market process is both fair and efficient, it appears superficially to be unfair. On the other hand, for the very reasons that the political process is both unfair and inefficient, it appears superficially to be fair.

The efficiency of the market process derives from the fact that it holds people accountable for the costs of their actions. These costs are always concentrated on market participants in ways that are impossible to ignore, and are often revealed in the harshness of bankruptcy and unemployment. Although this market accountability benefits all by promoting productivity and allowing freedom, each interest would prefer protection against the accountability of the market while benefitting from the accountability the market imposes on others. The fairness of the market process is that it does not allow some to free ride on the contributions of others. Because the costs and failures from market accountability are so concentrated, they easily dominate the public's perception of the market and create the impression of unfairness. Indeed, the market-inflicted failures appear all the more unfair against the backdrop of economic success made possible by those failures.

The inefficiency of the political process results from the fact that it allows people to capture benefits without being held accountable for the costs of those benefits. Political action typically concentrates benefits on a well-organized few while spreading the costs over the general public. As opposed to the fairness of the market process, the political process allows, and indeed encourages, some to ride free on the contribution of others. Because political benefits are concentrated, however, they are easily noticed, readily associated with the generosity of particular policies and politicians, and convey the impression that the political process mitigates the unfairness of the market. Furthermore, the greater the number receiving political benefits, and the more poorly the market operates because of the increasing weight of government, the more justice seems to demand extending political benefits tc additional recipients.

Fortunately, an effective antidote to the misconception of market unfairness is to understand how markets work. Of course, even the most basic economic understanding cannot and does not have to be universal. Only a relatively small number of influential people need to understand a complicated issue in order to be able to guide the prevailing public view. Certainly much economic error has been transmitted to the public via the misunderstanding of a relatively few opinion leaders who believe that economic progress and justice can be achieved only with extensive government controls over economic activity. That error remains politically appealing to many and continues to undermine both economic fairness and progress; but, it is error. The ultimate triumph of the market process is assured by the persistent advantage that truth has over error, no matter how politically convenient that error may be.

CONCLUSION

Recent work in praise of entrepreneurs as wellsprings of economic progress is a welcome shift away from the misconceptions reflected in pejoratives such as "the robber barons." There is danger, however, in the tendency to concentrate on entrepreneurs as heroes while ignoring the economic setting within which they operate. That danger is found in the temptation to conclude that since entrepreneurs promote economic development, public policy can enhance that development by directly assisting entrepreneurial enterprises. This conclusion is perilous because it ignores the fact that the productivity of entrepreneurship depends on the freedom, and accountability, made possible only by market competition. There is no surer way of undermining the freedom and accountability of the marketplace than through government attempts to promote some enterprises while necessarily penalizing others.

So celebrate entrepreneurial heroes and the creativity of their insights and efforts, but also celebrate the marketplace which serves as the only economic soil in which the seeds of entrepreneurial creativity flourish. By basing such a celebration on an informed appreciation for the free market economy, we can ensure that fertile ground remains for the seeds of entrepreneurship.

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THE 1990 CENSUS: GROWTH AND DIVERSITY IN GEORGIA

Marie McGrath Libbey
Suzanne A. Lindsay

The following article, one of a series detailing the initial results of the 1990 Census of Population and Housing, *is based on summary information released in March 1991. The Census Bureau cautions users, however, that the data released from Public Law 94-171 files on population are subject to possible correction for undercount or overcount. The U.S. Department of Commerce is considering whether to correct these counts and will publish corrected counts, if any, not later than mid-July 1991.*

The first major release from the 1990 Census of Population is the Public Law 94-171 file for each state. The law's primary purpose is to provide governmental officials with the small-area census population totals necessary to begin the legislative redistricting process. The files contain summary population data for every county, city, town and census block in the state. The data include total population counts and voting age counts (i.e., persons over 18 years of age), each delineated by race and Hispanic origin. Because the full files are voluminous, only selected 1990 state and county population data will be discussed here. Even summary data, however, show some of the major demographic shifts that have taken place in Georgia over the last two decades.

THE STATE

Georgia's 1990 population totaled 6,478,216, up 18.6 percent from a 1980 population of 5,463,105, and up 41.2 percent from 1970 (Table 1). The state's annual average rate of growth (AARG) in total population fell slightly, from 1.8 percent for 1970-80 to 1.7 percent for 1980-90. As reported in Table 1, the population totals for 1970 and 1980 differ slightly from those available by county (Table 2) because later revisions at the county level have not been subclassified by race and Hispanic origin.

Georgia's population has become somewhat more diverse racially and ethnically over the last decade. Although each group increased in absolute numbers, their rates of growth differ substantially, in part because earlier populations were relatively small. By race, the white population grew by 653,013 from 1980 to 1990, up 16.5 percent, at an annual average rate of growth of 1.5 percent (unchanged from 1970-80). The black population increased by 281,384 persons, or 19.2 percent, with an AARG of 1.8 percent (down from the 1970-80 rate of 2.1 percent). For this article, the Census categories of "American Indian, Eskimo, or Aleut"; "Asian or Pacific Islander", and "other race" have been combined into a general "other race" group. The composite category grew by 80,714 persons over the decade, an increase of 158.9 percent, and showed a high AARG of 10 percent, down from the very high 354.1 overall percentage change and 16.3 percent AARG found for 1970-80.

The percentage share of the white population has dropped from 73.9 percent of the total in 1970 to 72.3 percent in 1980 and 71 percent in 1990. The black population's share has increased slightly (25.9 percent in 1970, 26.8 percent in 1980, and 27 percent in 1990). The proportion of the "other race" group grew tenfold, how-

Cautionary Note

Because of the possibility of corrections, both the base data and analysis presented here should be considered preliminary and subject to change. Two lawsuits have challenged the preliminary population counts in Georgia. A suit filed by the City of Atlanta is currently under stay, pending the decision on correction. A second, filed by the City of Toccoa (joined by 41 cities, eleven counties and two individuals), remained before the court as this article went to press.

Table 1

Georgia's Population by Race and Hispanic Origin, 1970-1990*

Census Year	Total	White	Black	Other Races	Hispanic Origin
Census Year					
1970	4,589,575	3,391,242	1,187,149	11,184	45,289
1980	5,463,105	3,947,135	1,465,181	50,789	61,260
1990*	6,478,216	4,600,148	1,746,565	131,503	108,922
Percentage Distribution of Total State Population					
1970	100.0	73.9	25.9	0.2	1.0
1980	100.0	72.3	26.8	0.9	1.1
1990*	100.0	71.0	27.0	2.0	1.7
Population Change between 1970 and 1980					
Number	873,530	555,893	278,032	39,605	15,971
Percentage	19.0	16.4	23.4	354.1	35.3
Population Change between 1980 and 1990*					
Number	1,015,111	653,013	281,384	80,714	47,662
Percentage	18.6	16.5	19.2	158.9	77.8
Percentage Distribution of Population Change					
1970-1980	100.0	63.6	31.8	4.5	1.8
1980-1990*	100.0	64.3	27.7	8.0	4.7
Annual Average Rate of Growth					
1970-1980	1.8	1.5	2.1	16.3	3.1
1980-1990*	1.7	1.5	1.8	10.0	5.9

*See notice of possible changes to the 1990 data.
Note: Persons of Hispanic origin may be of any race.

Source: U.S. Bureau of the Census, *1980 Census of Population and Housing,* Summary Characteristics for Government Units and Standard Metropolitan Statistical Areas, Georgia, Sept. 1982; *1970 Census of Population,* Persons of Spanish Origin, June 1973; 1970 General Population Characteristics, Final Report, Georgia, Sept. 1971; PL 94-171 files, March 1991.

Table 2

Georgia's County Populations,
Distributions by Size, and Percentage Change, 1970-1990*

Population	Number of Counties	Total Population	Percent of State Total	Change in Population Distribution: Number of Counties	Total Population	Percent of State Total
		1970			**1970 to 1980**	
100,000 and Above	7	1,878,386	40.9	+3	+614,354	+4.7
50,000 to 99,999	11	732,801	16.0	+1	+32,570	-2.0
20,000 to 49,999	30	861,836	18.8	+7	+267,372	+1.9
10,000 to 19,999	49	707,322	15.4	+3	+45,572	-1.6
5,000 to 9,999	50	369,262	8.0	-12	-77,994	-2.7
Less than 5,000	12	38,323	0.8	-2	-6,822	-0.3
Total	159	4,587,930	100.0	—	—	—
		1980			**1980 to 1990***	
100,000 and Above	10	2,492,740	45.6	-1	+420,654	-0.7
50,000 to 99,999	12	765,371	14.0	+9	+700,226	+8.6
20,000 to 49,999	37	1,129,208	20.7	+2	+19,044	-2.9
10,000 to 19,999	52	752,894	13.8	-7	-105,829	-3.8
5,000 to 9,999	38	291,268	5.3	-2	-13,908	-1.1
Less than 5,000	10	31,501	0.6	-1	-4,953	-0.2
Total	159	5,462,982	100.0	—	—	—
		1990*			**1970 to 1990***	
100,000 and Above	9	2,913,394	45.0	+2.0	+1,035,008	+4.0
50,000 to 99,999	21	1,465,597	22.6	+10.0	+732,796	+6.7
20,000 to 49,999	39	1,148,252	17.7	+9.0	+286,416	-1.1
10,000 to 19,999	45	647,065	10.0	-4.0	-60,257	-5.4
5,000 to 9,999	36	277,360	4.3	-14.0	-91,902	-3.8
Less than 5,000	9	26,548	0.4	-3.0	-11,775	-0.4
Total	159	6,478,216	100.0	—	—	—

*See notice of possible changes to 1990 data.

Note: Totals for 1970 and 1980 differ slightly from those noted in Table 1 due to the use of more current data sets in this table.

Source: U.S. Bureau of the Census, *1980 Census of Population Characteristics of the Population*, Number of Inhabitants, Georgia, January 1982, PL 94-171 files, March 1991; U.S. Bureau of the Census, Atlanta Regional Office, unpublished data, 1989. Calculations by Selig Center for Economic Growth, The University of Georgia.

ever, from 0.2 percent of the total in 1970 to 0.9 percent in 1980 and 2 percent in 1990.

By race, the composite "other race" group contributed an increasing share of total population change, 8 percent in 1980-90 compared to its 1970-80 share of 4.5 percent. The increase in black Georgians accounted for 27.7 percent of total change between 1980-90, down from 31.8 percent of the change in the earlier decade. The white population accounted for 64.3 percent of the 1980-90 change, up slightly from its 63.6 percent share in 1970-80.

Persons of Hispanic origin constitute a separate census category based on ethnicity, and are properly compared only to non-Hispanics as a whole or to other individual ethnic groups. Because the members of this group can be of any race, the measures of population change given in Table 1 list them separately, and they are not included in percentage changes and distributions computed on the basis of race. Georgia had 108,922 persons of Hispanic origin in 1990, up from 1980 by 47,662, or 77.8 percent. The group's very high percentage growth during the 1980s was more than twice that registered between 1970 and 1980, and its annual average rate of growth of 5.9 percent was almost double the 1970-80 rate of 3.1 percent. Hispanics still make up a relatively small share of the population, however: 1 percent of all Georgians in 1970, 1.1 percent in 1980, and 1.7 percent in 1990. Similarly, compared to non-Hispanics, they contributed only a small fraction of total population change in the two decades, accounting for 1.8 percent of the total growth in the 1970-80 period and 4.7 percent over 1980-90.

COUNTY POPULATION SIZES

The population of Georgia is heavily concentrated in the metropolitan counties of the state (Table 2). Nine counties with 1990 populations of 100,000 or more accounted for 45 percent of the state's total residents, up substantially from the largest-county share in 1970 but down slightly from the equivalent value for 1980. Twenty-one counties had populations between 50,000 and 99,999, and 39 more had between 20,000 and 49,999 persons. Altogether, the 69 counties with populations of more than 20,000 represented 85.3 percent of the state's total population. The 90 remaining counties were home to less than 15 percent of the state population. Of these, 45 counties had populations between 10,000 and 19,999, 36 had populations between 5,000 and 9,999, and nine had fewer than 5,000 residents. Individual county populations ranged from 648,951 in Fulton County to 1,915 in Taliaferro County.

The number of counties falling into the larger population categories has increased substantially over two decades. Counties with populations of 100,000 or more declined to nine from ten in 1980 when the population in Dougherty County fell to 96,311 persons, but still totaled two more than the seven counties included in 1970. Between 1970 and 1990, the total percentage of the state population living in counties of 50,000 or more grew from 56.9 percent to 67.6 percent, and the number of these high-population counties increased from 18 to 30. Over the same period, the number of counties with populations of less than 20,000 persons declined steadily, dropping from 111 in 1970 to 100 in 1980 and finally, to 90 in 1990.

In absolute numbers, counties with 50,000 or more residents added over 1.1 million residents between 1980 and 1990, and over 1.7 million between 1970-90. Within that category, however, counties of 50,000-99,999 added over 700,000 residents and gained 8.6 percentage points in their share of the state total. The largest counties (100,000 or more) added over 420,000 residents over the last decade, but their share of the state total actually dropped dropped by 0.7 percentage points, to 45 percent. Counties with 20,000-49,999 population gained only slightly during the decade, adding just less than 20,000 residents as a group and losing almost three percentage points of their population share. In the aggregate, counties with fewer than 20,000 residents lost almost 125,000 residents, with the greatest losses occurring in the 10,000-19,999 group.

INDIVIDUAL COUNTIES

The distribution of population by race or Hispanic origin, and the percentage change in each group between 1980 and 1990, varied widely among Georgia's 159 counties (Table 3). Cobb County had the highest count of white residents (391,959), Fulton County the highest number of black residents (324,008), and DeKalb County the largest "other race" population (23,102) and the most persons of Hispanic origin (15,619). With an increase of 186,007 residents, Gwinnett County added the most persons over the decade, and also added the largest number of whites (159,708). DeKalb County added the largest number of black residents (99,445), those in the composite "other race" group (15,312), and persons of Hispanic origin (8,149). In contrast, Chattahoochee County lost 4,798 residents overall, or 22.1 percent of its 1980 population, the greatest numerical and percentage declines at the county level.

The large percentage changes in both total population and/or residents classified by race or Hispanic origin reported in many smaller counties indicate the strong impact of relatively small numerical changes on limited population bases. For example, Camden County's 16,796 new residents represented growth of 125.6 percent since 1980, bringing its total population to just over 30,000. Camden also led the state with with a 158.9 percent increase in white residents (from 8,993 to 23,284). Forsyth County had one black resident in 1980 but 14 in 1990, an increase of 1,300 percent. Hall County reported 3,768 more residents in the "Other Race" group in 1990, a change of 1,055.5 percent. Dawson County's Hispanic population increased from three to 39 persons, giving it

a percentage growth of 1,200 percent.

SUMMARY

Although corrected counts remain possible, summary statistics released from the *1990 Census of Population* show Georgia's overall growth and the increasing racial and ethnic diversity of its population. Within individual counties, both growth and diversity varied widely. A more complete picture of Georgia's demographic characteristics at all levels will emerge when detailed reports are released, probably in late 1992 or early in 1993.

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County population data is exhibited in Table 3 on the next four pages.

Table 3

County Population in 1990*, with Percentage Distributions and Change, By Race and Hispanic Origin

	Population 1990*	1990* Percentage Distribution				Population Change, 1980-1990* (Percent)				
		White	Black	Other Races	Hispanic Origin	Total	White	Black	Other Races	Hispanic Origin
Appling	15,744	78.5	20.8	0.8	0.9	1.2	-0.2	4.2	155.3	11.3
Atkinson	6,213	71.3	26.7	2.1	2.5	1.2	-0.2	-2.0	966.7	175.0
Bacon	9,566	83.9	15.5	0.6	0.9	2.0	0.9	6.2	100.0	59.6
Baker	3,615	48.3	51.5	0.2	0.6	-5.1	-7.9	-1.9	-46.2	-47.5
Baldwin	39,530	56.8	42.3	0.9	0.9	14.0	4.3	28.7	115.6	-23.1
Banks	10,308	95.8	3.5	0.7	0.5	18.5	19.6	-15.9	366.7	57.6
Barrow	29,721	87.4	11.3	1.4	0.9	39.2	42.9	6.6	912.5	76.9
Bartow	55,911	90.2	9.0	0.8	0.9	37.2	40.4	6.5	271.7	129.5
Ben Hill	16,245	68.3	31.3	0.4	0.5	1.5	-0.3	5.3	73.5	-4.9
Berrien	14,153	87.7	11.6	0.7	2.0	4.6	5.3	-2.5	92.2	147.3
Bibb	149,967	57.5	41.7	0.8	0.6	-0.2	-5.7	7.7	63.5	-11.6
Bleckley	10,430	76.7	22.4	0.9	0.4	-3.1	-3.6	-1.5	-4.9	-59.8
Brantley	11,077	94.2	5.4	0.4	0.3	27.3	28.8	4.7	65.4	-34.5
Brooks	15,398	57.8	41.5	0.7	1.6	0.9	5.7	-6.0	155.6	49.7
Bryan	15,438	84.3	14.9	0.8	0.9	51.7	64.0	4.7	170.2	60.0
Bulloch	43,125	73.0	26.0	1.0	0.8	20.5	20.8	17.5	128.9	7.5
Burke	20,579	47.4	52.3	0.3	0.3	6.4	9.4	3.6	64.9	-75.1
Butts	15,326	63.7	35.5	0.8	0.7	12.2	18.2	1.6	162.2	-40.8
Calhoun	5,013	40.8	58.9	0.3	0.2	-12.3	-15.1	-10.1	-38.1	-85.5
Camden	30,167	77.2	20.2	2.7	2.1	125.6	158.9	41.7	813.6	445.6
Candler	7,744	67.6	31.1	1.3	1.8	3.0	2.9	-0.2	405.0	50.0
Carroll	71,422	83.5	15.7	0.8	0.8	26.8	28.4	16.0	141.2	55.0
Catoosa	42,464	98.5	0.8	0.7	0.5	14.8	14.5	23.5	63.8	-11.3
Charlton	8,496	71.7	27.7	0.6	0.4	15.7	18.1	9.0	104.3	-10.3
Chatham	216,935	60.2	38.1	1.7	1.3	7.3	6.8	6.9	44.0	22.2
Chattahoochee	16,934	59.6	30.9	9.5	10.6	-22.1	-21.8	-25.7	-9.6	17.3
Chattooga	22,242	90.9	8.7	0.4	0.3	1.8	1.5	2.9	47.3	-54.3
Cherokee	90,204	97.2	1.9	0.9	1.2	74.5	74.3	51.7	217.0	206.1
Clarke	87,594	70.7	26.2	3.1	1.7	17.6	11.2	30.5	119.1	56.1
Clay	3,364	38.9	60.8	0.3	0.6	-5.3	-1.5	-7.4	-33.3	5.6
Clayton	182,052	72.4	23.8	3.8	2.1	21.1	-4.5	313.6	261.7	131.7
Clinch	6,160	72.3	27.3	0.4	1.0	-7.5	-4.6	-14.1	-33.3	3.4
Cobb	447,745	87.5	9.9	2.6	2.1	50.4	39.2	238.2	282.9	231.1
Coffee	29,592	72.9	25.4	1.8	1.9	10.0	8.0	10.0	345.4	122.8
Colquitt	36,645	73.8	24.2	2.0	4.3	3.6	0.3	7.0	480.3	338.7
Columbia	66,031	86.0	11.0	3.0	1.5	64.6	69.6	23.6	165.4	79.1
Cook	13,456	69.2	30.0	0.8	1.6	-0.3	-0.5	-1.4	200.0	214.5
Coweta	53,853	76.7	22.6	0.6	0.7	37.1	45.1	13.9	251.0	31.0
Crawford	8,991	67.7	30.7	1.6	1.7	17.0	32.0	-9.5	500.0	88.6
Crisp	20,011	58.9	40.7	0.4	0.3	2.7	0.0	6.6	13.6	-67.7

(continued)

Table 3 (Continued)

	Population 1990*	1990* Percentage Distribution				Population Change, 1980-1990* (Percent)				
		White	Black	Other Races	Hispanic Origin	Total	White	Black	Other Races	Hispanic Origin
Dade	13,147	98.7	0.8	0.6	0.5	6.7	6.8	-7.3	21.3	-39.6
Dawson	9,429	98.9	0.0	1.0	0.4	97.5	97.1	**	136.6	1200.0
Decatur	25,511	59.7	39.5	0.8	1.9	0.1	-1.7	1.5	180.3	108.8
DeKalb	545,837	53.6	42.2	4.2	2.9	13.0	-15.1	75.9	196.6	109.1
Dodge	17,607	71.7	27.6	0.7	0.8	3.8	1.6	8.3	186.0	-3.3
Dooly	9,901	50.4	49.0	0.6	0.8	-8.5	-9.6	-8.1	107.1	-37.4
Dougherty	96,311	48.8	50.2	0.9	0.8	-4.4	-17.2	12.3	2.7	-29.4
Douglas	71,120	91.0	7.9	1.1	1.1	30.3	25.8	98.6	153.7	98.7
Early	11,854	55.5	44.1	0.4	0.4	-9.9	-11.8	-8.0	157.9	-76.2
Echols	2,334	86.0	11.3	2.7	1.9	1.6	7.0	-30.7	53.7	87.5
Effingham	25,687	85.3	14.1	0.6	0.7	40.2	47.5	5.9	187.5	26.1
Elbert	18,949	69.4	30.2	0.4	0.7	1.0	1.7	-0.8	27.9	-20.2
Emanuel	20,546	67.0	32.5	0.5	0.4	-1.2	-2.9	1.4	244.4	-48.1
Evans	8,724	64.8	34.0	1.2	1.2	3.5	3.4	1.2	224.2	23.9
Fannin	15,992	99.6	0.0	0.4	0.4	8.4	8.4	-28.6	20.0	-32.6
Fayette	62,415	92.5	5.4	2.1	1.6	114.9	109.2	164.9	642.0	343.8
Floyd	81,251	85.3	13.7	1.0	1.0	1.8	0.2	8.3	123.5	52.5
Forsyth	44,083	98.8	0.0	1.1	1.4	57.7	56.8	1300.0	195.2	366.9
Franklin	16,650	89.5	10.1	0.4	0.5	9.6	9.5	9.7	85.3	-16.3
Fulton	648,951	47.8	49.9	2.3	2.1	10.0	10.5	6.8	148.1	76.6
Gilmer	13,368	99.2	0.3	0.5	0.8	20.3	19.8	68.2	265.0	30.8
Glascock	2,357	87.2	12.6	0.2	0.3	-1.0	3.2	-23.4	100.0	-88.0
Glynn	62,496	73.6	25.5	0.9	0.9	13.7	14.6	9.9	55.9	14.5
Gordon	35,072	95.5	3.8	0.8	0.6	16.6	16.8	-0.1	207.0	56.3
Grady	20,279	67.4	31.5	1.1	1.4	2.2	1.9	1.8	46.7	96.6
Greene	11,793	49.7	49.9	0.4	0.8	3.5	9.2	-1.8	48.4	-28.9
Gwinnett	352,910	90.9	5.2	3.9	2.4	111.4	99.0	343.9	790.3	494.0
Habersham	27,621	91.7	5.6	2.7	1.2	10.4	7.6	17.6	367.3	284.3
Hall	95,428	87.1	8.6	4.3	4.8	26.1	21.4	20.1	1055.5	725.7
Hancock	8,908	20.2	79.4	0.3	0.7	-5.9	-12.3	-4.4	383.3	-62.9
Haralson	21,966	93.0	6.5	0.5	0.4	19.2	20.0	6.7	106.1	-3.4
Harris	17,788	73.7	25.7	0.6	0.5	15.0	29.9	-13.8	52.0	-43.6
Hart	19,712	79.4	20.3	0.3	0.4	6.1	8.4	-3.0	156.0	-49.3
Heard	8,628	86.0	13.5	0.5	0.8	32.3	38.1	4.0	62.1	19.3
Henry	58,741	88.7	10.3	1.0	0.8	61.8	75.8	-4.6	87.0	65.9
Houston	89,208	76.3	21.7	1.9	1.6	15.0	12.3	22.0	64.6	39.9
Irwin	8,649	69.3	30.4	0.3	0.6	-3.8	-3.2	-5.5	50.0	-24.3
Jackson	30,005	89.8	9.7	0.5	0.5	18.4	19.5	5.6	253.3	-7.5
Jasper	8,453	64.8	34.8	0.4	0.7	11.9	22.1	-3.4	68.4	-33.7
Jeff Davis	12,032	83.8	15.2	0.9	1.2	4.9	4.7	0.5	418.2	1.4
Jefferson	17,408	44.0	55.7	0.3	0.2	-5.4	-7.7	-3.6	-2.0	-84.7
Jenkins	8,247	58.3	41.4	0.3	0.2	-6.7	-7.3	-6.3	166.7	-90.4
Johnson	8,329	65.7	34.1	0.2	0.4	-3.8	-7.0	2.6	166.7	-63.5
Jones	20,739	73.9	25.6	0.5	0.4	25.1	33.2	6.1	55.2	-21.0
Lamar	13,038	65.6	34.1	0.3	0.4	6.7	7.6	5.3	-7.5	-67.8

Table 3 (Continued)

	Population 1990*	1990* Percentage Distribution				Population Change, 1980-1990* (Percent)				
		White	Black	Other Races	Hispanic Origin	Total	White	Black	Other Races	Hispanic Origin
Lanier	5,531	71.9	26.6	1.5	1.2	-2.2	-6.2	5.7	260.9	100.0
Laurens	39,988	66.2	33.3	0.5	0.5	8.1	7.2	9.1	95.1	-43.9
Lee	16,250	80.0	19.3	0.7	0.7	39.1	47.1	12.8	80.0	41.8
Liberty	52,745	54.9	39.2	6.0	6.1	40.3	30.8	50.2	83.4	122.1
Lincoln	7,442	61.8	38.0	0.2	0.8	10.8	19.3	-0.8	45.5	-39.1
Long	6,202	75.5	21.6	2.8	3.0	37.1	40.2	15.5	733.3	166.2
Lowndes	75,981	66.6	31.9	1.5	1.3	11.8	8.3	17.7	78.7	13.3
Lumpkin	14,573	96.1	1.6	2.3	1.5	35.4	35.4	2.6	80.0	217.9
McDuffie	20,119	63.2	36.4	0.4	0.4	8.5	8.0	9.2	27.4	-66.7
McIntosh	8,634	56.5	43.1	0.4	0.7	7.3	11.1	2.4	75.0	53.7
Macon	13,114	40.9	58.7	0.5	0.4	-6.3	-11.9	-2.1	-1.6	-62.5
Madison	21,050	90.5	8.8	0.7	0.9	18.6	20.9	-4.8	265.9	33.8
Marion	5,590	58.1	41.3	0.6	0.4	5.5	14.6	-5.9	183.3	-51.1
Meriwether	22,411	55.1	44.6	0.3	0.5	5.6	6.5	4.5	3.2	-49.4
Miller	6,280	72.3	27.5	0.2	0.3	-10.8	-9.7	-14.0	500.0	-73.0
Mitchell	20,275	51.4	47.6	1.1	1.3	-4.0	-4.4	-4.8	164.2	23.8
Monroe	17,113	67.8	31.6	0.6	0.6	17.1	28.3	-2.2	155.8	-44.5
Montgomery	7,163	69.8	28.3	1.9	2.0	2.2	4.0	-6.6	308.8	67.1
Morgan	12,883	64.9	34.6	0.5	0.9	11.3	22.9	-6.1	228.6	13.6
Murray	26,147	99.3	0.2	0.6	0.5	32.8	32.6	24.2	87.5	3.8
Muscogee	179,278	59.0	38.0	3.0	3.0	5.4	-2.4	17.8	39.8	50.1
Newton	41,808	76.9	22.4	0.7	0.9	21.2	25.7	6.3	201.1	69.6
Oconee	17,618	91.7	7.5	0.8	1.0	41.8	45.1	3.7	413.8	97.8
Oglethorpe	9,763	74.7	24.8	0.5	0.7	9.3	20.1	-14.5	92.3	-41.1
Paulding	41,611	95.4	4.0	0.6	0.6	59.4	59.9	36.8	250.0	86.8
Peach	21,189	50.6	47.5	1.9	1.8	10.6	14.1	4.1	416.9	162.5
Pickens	14,432	97.8	1.7	0.5	0.3	23.9	24.3	-10.5	312.5	-30.3
Pierce	13,328	87.7	11.8	0.6	0.8	12.0	14.8	-5.6	40.7	-18.8
Pike	10,224	79.4	20.1	0.5	0.5	14.4	24.0	-12.3	8.9	-58.8
Polk	33,815	84.5	14.2	1.4	1.4	4.4	4.1	-0.7	261.7	76.3
Pulaski	8,108	66.6	32.5	1.0	1.0	-9.4	-7.9	-14.4	338.9	45.6
Putnam	14,137	65.8	33.6	0.6	0.7	37.3	55.2	11.1	206.9	86.5
Quitman	2,209	49.5	50.1	0.4	0.0	-6.3	7.3	-17.1	350.0	-95.0
Rabun	11,648	98.9	0.4	0.7	0.6	11.3	11.3	-37.9	72.9	45.7
Randolph	8,023	41.3	57.9	0.8	0.5	-16.4	-21.0	-13.6	106.1	-77.8
Richmond	189,719	55.1	42.0	2.9	2.0	4.5	-4.1	17.1	20.5	1.9
Rockdale	54,091	90.4	8.1	1.5	1.1	47.2	47.2	36.7	140.8	136.7
Schley	3,588	64.6	34.1	1.4	1.5	4.5	8.0	-2.2	32.4	-38.9
Screven	13,842	54.9	44.9	0.3	0.4	-1.4	-0.5	-2.7	20.7	-66.7
Seminole	9,010	66.9	32.7	0.4	5.9	-0.5	0.4	-0.3	-63.6	215.5
Spalding	54,457	70.3	29.0	0.7	0.6	13.7	10.3	21.4	112.5	-24.4
Stephens	23,257	87.3	12.0	0.7	0.6	6.9	6.6	5.7	109.9	-14.8
Stewart	5,654	36.1	63.3	0.6	0.5	-4.1	-2.5	-5.5	133.3	-66.2
Sumter	30,228	52.6	46.5	0.9	0.6	3.0	-2.0	8.2	79.6	-35.1
Talbot	6,524	37.3	62.3	0.3	0.8	-0.2	5.6	-3.6	133.3	-31.1

(continued)

Table 3 (Continued)

	Population 1990*	1990* Percentage Distribution				Population Change, 1980-1990* (Percent)				
		White	Black	Other Races	Hispanic Origin	Total	White	Black	Other Races	Hispanic Origin
Taliaferro	1,915	38.4	60.9	0.6	1.1	-5.8	3.5	-11.5	300.0	0.0
Tattnall	17,722	68.2	29.2	2.6	3.1	-2.3	-5.6	-1.4	472.5	302.2
Taylor	7,642	56.2	43.2	0.7	0.8	-3.3	-8.7	3.6	284.6	-47.7
Telfair	11,000	65.5	34.3	0.2	0.4	-3.9	-8.3	5.7	47.1	-51.2
Terrell	10,653	39.9	59.9	0.2	0.4	-11.4	-9.5	-12.7	47.1	-75.2
Thomas	38,986	61.5	37.9	0.7	0.7	2.3	2.7	0.9	80.3	-23.5
Tift	34,998	71.3	26.8	2.0	3.5	6.5	3.5	9.9	193.2	186.7
Toombs	24,072	73.1	23.4	3.5	3.4	6.6	5.0	-1.7	783.2	370.9
Towns	6,754	99.7	0.0	0.3	0.3	19.8	19.7	-100.0	66.7	-33.3
Treutlen	5,994	66.8	33.1	0.2	0.3	-1.5	-1.2	-2.3	12.5	-77.5
Troup	55,536	69.2	30.1	0.7	0.5	11.1	12.5	6.8	107.6	-29.9
Turner	8,703	58.9	40.6	0.5	0.4	-8.5	-14.4	1.0	81.8	-57.3
Twiggs	9,806	53.9	45.9	0.2	0.5	4.8	15.4	-5.4	15.4	-65.2
Union	11,993	99.4	0.2	0.4	0.4	27.7	27.4	533.3	104.2	25.6
Upson	26,300	71.9	27.7	0.5	0.4	1.2	0.6	1.8	70.1	-30.0
Walker	58,340	95.6	3.8	0.5	0.4	3.3	3.3	-3.5	105.9	-14.1
Walton	38,586	80.8	18.4	0.8	0.9	23.6	27.2	8.0	133.8	20.3
Ware	35,471	73.3	26.0	0.6	0.5	-4.6	-9.2	10.3	30.6	-30.4
Warren	6,078	39.7	60.2	0.1	0.0	-7.7	-8.8	-6.8	-43.8	-98.1
Washington	19,112	48.1	51.7	0.2	0.3	1.4	0.5	2.4	-16.7	-51.5
Wayne	22,356	80.0	19.5	0.5	0.8	7.7	6.9	10.2	60.6	27.3
Webster	2,263	49.8	50.0	0.2	0.0	-3.3	-1.9	-4.1	-66.7	-96.0
Wheeler	4,903	68.4	30.1	1.6	2.1	-4.9	-7.4	-3.7	1000.0	165.8
White	13,006	96.3	2.8	1.0	0.8	28.5	29.3	-8.2	202.4	104.2
Whitfield	72,462	93.2	4.0	2.8	3.2	10.1	7.7	15.2	269.4	341.3
Wilcox	7,008	67.9	31.7	0.4	0.4	-8.8	-9.0	-9.3	550.0	-45.5
Wilkes	10,597	53.3	46.3	0.4	0.4	-3.2	-4.2	-2.4	52.0	-71.4
Wilkinson	10,228	57.8	42.1	0.2	0.3	-1.4	3.5	-7.6	166.7	-69.7
Worth	19,745	68.6	30.6	0.8	1.1	9.3	14.6	-2.4	208.0	31.4

Note: Persons of Hispanic origin may be of any race.

* See notice of possible changes to the 1990 data.
** Base value is zero, therefore no percentage increase can be calculated.

Source: U.S. Bureau of the Census, 1980 Census of Population and Housing, Summary Characteristics for Governmental Units and Standard Metropolitan Statistical Areas, Georgia, September 1982; PL 94-171 files, March 1991. Percentage distribution and percentage change calculated by the Selig Center for Economic Growth, The University of Georgia. Percentage changes rounded to the nearest tenth of a percent.

Revision of Taxable Sales for Georgia's MSAs

The 1990 total taxable sales estimates for Georgia's metropolitan statistical areas, recently published in the March-April, 1991 issue of Georgia Business and Economic Conditions, have been revised. With 52 percent of total state taxable sales, the Atlanta MSA continued to lead, followed by the Savannah and Augusta MSAs, with 4.2 and $4.0 of sales, respectively (see table). It should be noted that estimates for the Augusta, Chattanooga, and Columbus MSAs include only the Georgia portions of those areas.

The Augusta MSA's 10.7 percent increase in taxable sales for 1990 compared to 1989 stood well above the increases for other areas. Total taxable sales increases averaged 4.4 percent for Georgia's 38 metropolitan counties altogether, and 3.4 percent for the 121 nonmetropolitan counties. The metropolitan counties contributed almost 72 percent of taxable sales; nonmetropolitan areas added 28.1 percent. Taxable sales estimates are based on data from the Georgia Department of Revenue's Sales and Use Tax System, and include the value of all taxable items, as reported by firms selling or acquiring them, plus penalties and interest collected. Items exempted from state sales tax are not included in the database.

State Total Taxable Sales, By Metropolitan Statistical Area*, 1989, 1990, with Percentage Change and Percent of State Total (Thousands of Dollars)

Area	Total Taxable Sales (Thousands of Dollars) 1989	1990	Percentage Change 1989-90	Percent of Total State Taxable Sales 1990
Albany MSA	1,239,332	1,304,970	5.3	1.9
Athens MSA	1,526,411	1,608,943	5.4	2.3
Atlanta MSA	35,267,246	36,757,652	4.2	52.0
Augusta MSA*	2,568,578	2,843,932	10.7	4.0
Chattanooga MSA*	695,973	704,140	1.2	1.0
Columbus MSA*	1,834,997	1,859,591	1.3	2.6
Macon Warner-Robins MSA	2,686,065	2,743,120	2.1	3.9
Savannah MSA	2,850,225	2,988,314	4.8	4.2
Total MSA Counties	48,668,827	50,810,661	4.4	71.9
Total Non-MSA Counties	19,231,979	19,885,189	3.4	28.1
State Total	67,900,806	70,695,850	4.1	100.0

*Georgia counties only.

Source: Selig Center for Economic Growth, based on data of the Sales and Use Tax System, Georgia Department of Revenue, February 1991.

GEORGIA BUSINESS STATISTICS

SERIES	FEB 1991	JAN 1991	DEC 1990	FEB 1990
Georgia Leading Indicators Index[1] (1969=100)	165.18	166.06	164.98	182.93
Georgia Coincident Indicators Index[1] (1969=100)	596.84	611.67	611.75	632.38
Nonagricultural Employment[2] (thousands)	2,939.2	2,966.0	3,019.7	2,950.0
Manufacturing Employment[2] (thousands)	537.3	544.8	550.6	560.9
Average Weekly Earnings, Manufacturing[2] (dollars)	370.51	379.61	392.08	363.91
Help Wanted Advertising, Atlanta Index[3] (1967=100)	142	159	159	212
Taxable Retail Sales[4] ($ millions)	3,484.1	3,333.4	4,783.2	3,719.6
Building Permits[5]				
Residential Housing Units, Private (thousands)	3.3	2.5	2.2	3.1
Value of Residential Housing ($ thousands)	237,869	171,197	141,030	211,327
Value of Nonresidential Construction ($ thousands)	127,630	121,483	116,556	178,673
Industrial Buildings	4,783	7,975	23,977	8,586
Office, Bank and Other Professional Buildings	20,567	11,197	7,086	25,264
Stores and Other Mercantile Buildings	17,051	33,637	28,165	37,522
Other	85,229	68,674	57,328	107,301
Consumer Price Index[6] (CPI-U, all items)				
South U.S. (1982-84 = 100)	131.7	131.4	130.9	125.4
South/Population more than 1,200,000	132.4	131.7	131.3	126.1
South/Population 450,000 - 1,200,000	133.0	132.8	132.2	126.9
South/Population 50,000 - 450,000	130.3	130.3	129.7	123.9
South/Population Less than 50,000	130.9	130.3	130.2	124.3
Atlanta (1982-84=100)[a]	–	–	132.6[b]	127.3[b]
Prices Received by Farmers, Georgia Index[7] (1977=100)	152[r]	154	148	136
	1990:IV	**1990:III**	**1990:II**	**1989:III**
Total Personal Income[8] ($ millions)	111,120	110,828	109,343	104,886

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[1] Georgia Economic Forecasting Project, Selig Center for Economic Growth, College of Business Administration, University of Georgia. Initial monthly values subject to revision.

[2] Labor Information Systems, Georgia Department of Labor.

[3] Series published by The Conference Board, Inc.

[4] Derived by the Selig Center for Economic Growth, College of Business Administration, University of Georgia, from data of the Sales and Use Tax System, Georgia Department of Revenue.

[5] U.S. Department of Commerce, Bureau of the Census.

[6] U.S. Department of Labor, Bureau of Labor Statistics, Southeastern Regional Office.

[7] Georgia Department of Agriculture, Georgia Agricultural Statistics Service.

[8] U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System.

[a] Atlanta index is average of each 6 months of the calendar year; base revised to 1982-84=100 as of January 1, 1988.

[b] Data are for 2nd half, 1990, and 2nd half, 1989, respectively.

[r] Revised

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